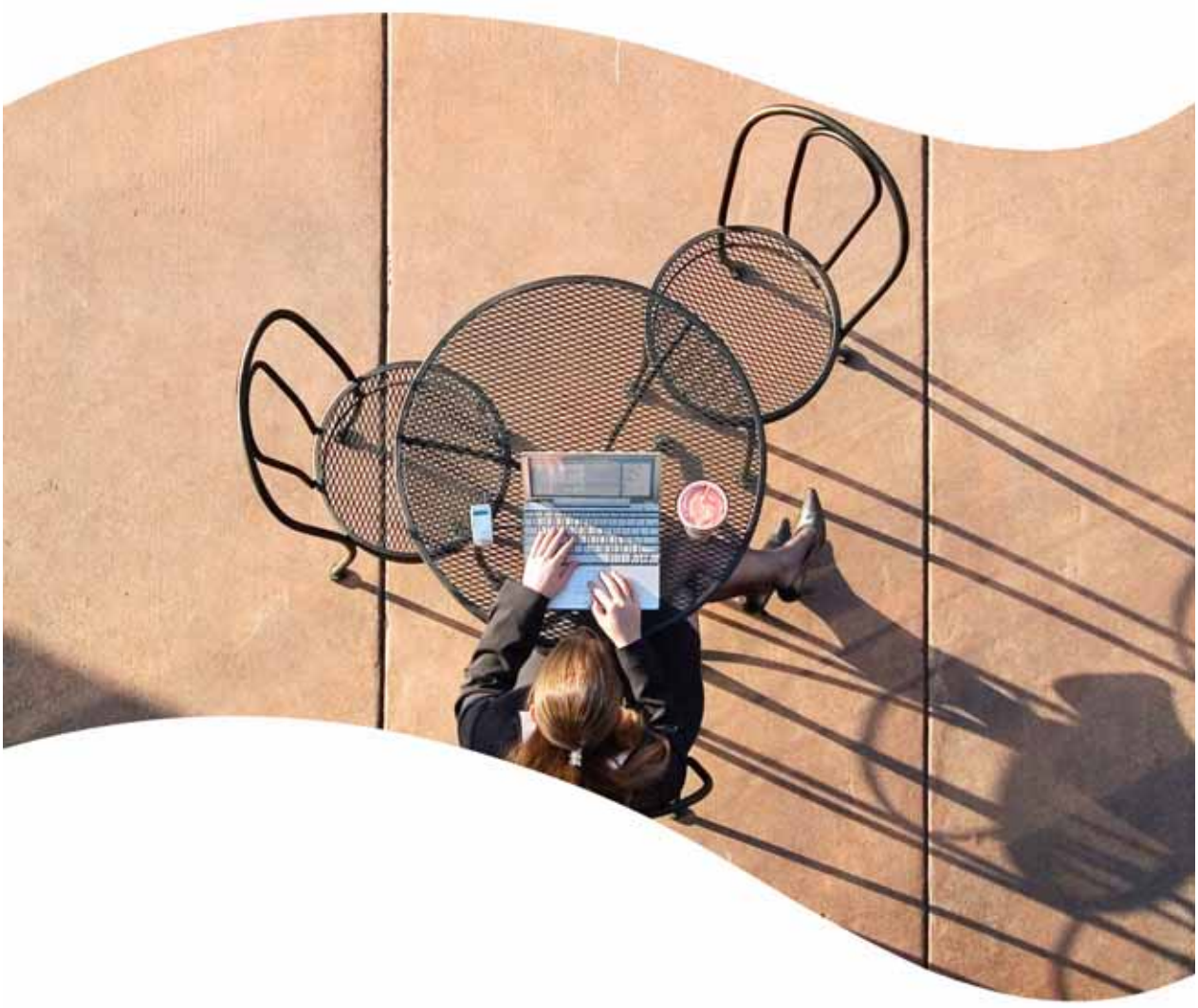
Business Continuity Solutions

BUSINESS CONTINUITY | SonicWALL CDP Series

SonicWALL CDP 5.1
Agent Tool User's Guide

SONICWALL®



SonicWALL CDP
Agent Tool User's Guide

Version 5.1

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SonicWALL CDP Agent Tool User Guide

This User's Guide provides installation procedures and configuration guidelines for deploying the SonicWALL Continuous Data Protection (CDP) Agent Tool. The SonicWALL CDP Agent Tool provides user tools for backing up folder and application data.

The SonicWALL CDP appliance backs up data as changes occur and replicates them first locally and then, if configured, to a secure offsite location. This real-time data protection provides the most current file and system backup possible. By combining the advantages of local disk-based backup (fast recovery) with offsite backup*, the SonicWALL CDP appliance helps protect your network from threats of data loss.

*Offsite backup is offered as a subscription-based service.

This guide contains the following sections:

- "Installing the SonicWALL CDP Agent Tool" section on page 2
- "Setting up Your SonicWALL CDP Agent" section on page 5
- "SonicWALL CDP Agent Tool Feature Overview" section on page 8
- "Managing Server Applications in the Agent Tool" section on page 19
- "Installing and Using the SonicWALL CDP Linux Agent" section on page 60
- "Using the SonicWALL CDP Mac OS X Agent" section on page 81

Installing the SonicWALL CDP Agent Tool

This section describes installation of the SonicWALL CDP Agent Tool for Windows systems. See the following subsections:

- "Installation Prerequisites" section on page 2
- "Configuration Information" section on page 2
- "Downloading and Installing the SonicWALL CDP Agent Tool" section on page 2

Installation Prerequisites

In order to install the SonicWALL CDP Agent Tool, you must have:

- A computer which meets or exceeds the following requirements:
  - Pentium III 450 MHZ Processor
  - 256 MB of RAM
  - 40 MB of free disk space
  - Windows XP, Windows 2000, Windows Server 2000/2003/2008
- Administrator privileges on the computer you are installing to
- All applications closed before installing

Configuration Information

Have your network administrator supply you with the following information needed for SonicWALL CDP Agent setup:

Server Name: _____	The name of the SonicWALL CDP appliance you are connecting to.
Password: _____	The password for your SonicWALL CDP appliance (if applicable).
CDP IP Address: _____	The static IP address for your SonicWALL CDP appliance.

Downloading and Installing the SonicWALL CDP Agent Tool

Perform the following steps to download and install the SonicWALL CDP Agent Tool on your computer:

Downloading the Latest SonicWALL CDP Agent Tool Software

1. Open a Web browser on the computer you are using to administer the SonicWALL CDP appliance.
2. Enter <http://software.sonicwall.com/applications/dataprotect/> in the **Location** or **Address** bar. The MySonicWALL CDP Software download Web page displays.

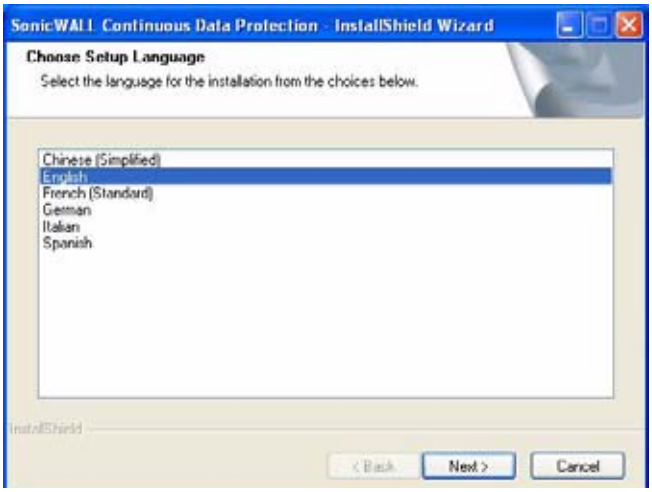
3. Click on the download link and choose “Save As” to download the latest version of SonicWALL CDP Software to a location on your hard drive.

Installing the SonicWALL CDP Agent Tool

1. Navigate to the folder where your software is downloaded and extract the files.
2. Open the **Setup.exe** file to begin the installation process.

Note If you are running Windows XP SP2 or use a third-party firewall, you may receive a warning during installation of the SonicWALL CDP software. For more information on configuring your firewall to work with SonicWALL CDP, refer to the *SonicWALL CDP Administrator’s Guide*.

3. Select your preferred language and click **Next**. If you wish to change your language at a later time, you will need to uninstall and re-install the software.



4. If you agree to the terms and conditions, select the **I accept the terms of the license agreement** option and click the **Next** button.

SonicWALL Continuous Data Protection - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
End User License Agreement
This SonicWALL End-User License Agreement is a legal agreement between you (or your company) and SonicWALL for the SonicWALL CDP product which includes computer software, printed materials, and may include "online" or electronic documentation ("Product" or "Software" or "Software Product"). By exercising your rights to make and use copies of the Software Product, you agree to the terms of this End-User Agreement.
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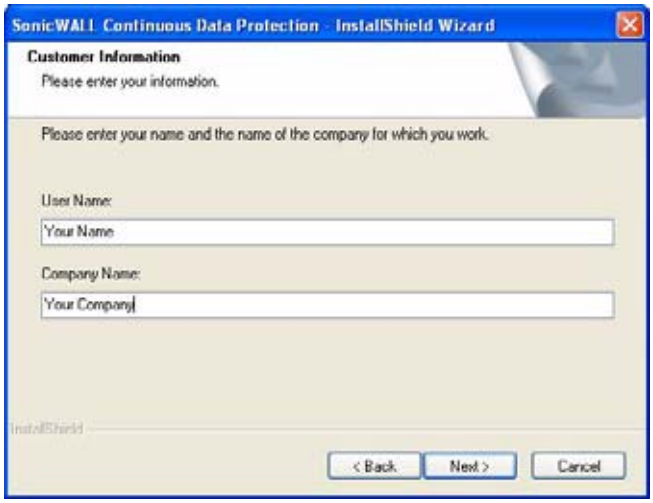
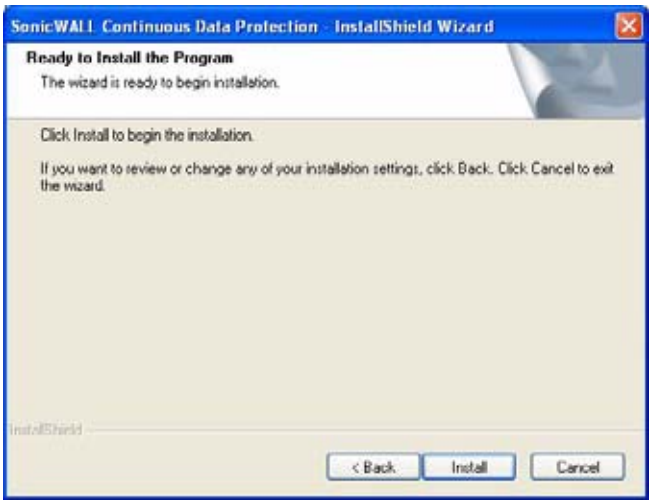
GRANT OF LICENSE: SonicWALL grants you a nonexclusive, royalty-free right to use
I accept the terms of the license agreement
I do not accept the terms of the license agreement
Print
InstallShield
< Back
Next >
Cancel

5. Enter a **User Name** and **Company Name** and click the **Next** button to continue.



6. To install the software, click **Install**.


SonicWALL Continuous Data Protection - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

7. Once the software installation is complete, click the **Finish** button.

You have successfully completed SonicWALL CDP Agent Tool.

Setting up Your SonicWALL CDP Agent

The following section provides instructions for setting up the CDP Agent Tool. This section contains the following subsections:

- "Logging into the SonicWALL CDP Agent" section on page 5
- "Verifying SonicWALL CDP Operation" section on page 6
- "Troubleshooting CDP Agent Tool Operation" section on page 7

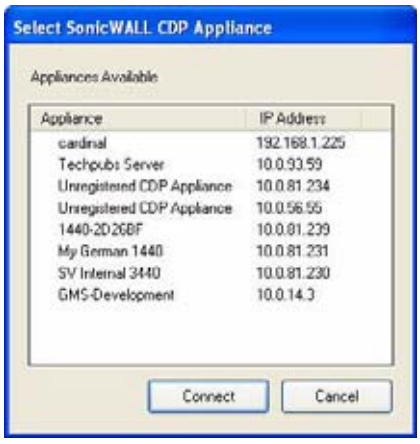
Logging into the SonicWALL CDP Agent

Perform the following steps to login to your SonicWALL CDP Agent for the first time.

1. Launch the SonicWALL CDP Agent Tool from the Windows Start Menu: **Programs** > **SonicWALL** > **SonicWALL Continuous Data Protection** > **SonicWALL Agent Tool**.

Note If you are running Windows XP SP2 or use a third-party firewall, you may receive a warning during initial launch of the SonicWALL CDP software. For more information on configuring your firewall to work with SonicWALL CDP, contact your network administrator or refer to the SonicWALL CDP Administrator's Guide.

2. Choose the correct CDP Appliance from the list and click the **Connect** button. If you are unsure which CDP appliance to connect to, contact your network administrator before continuing with setup.



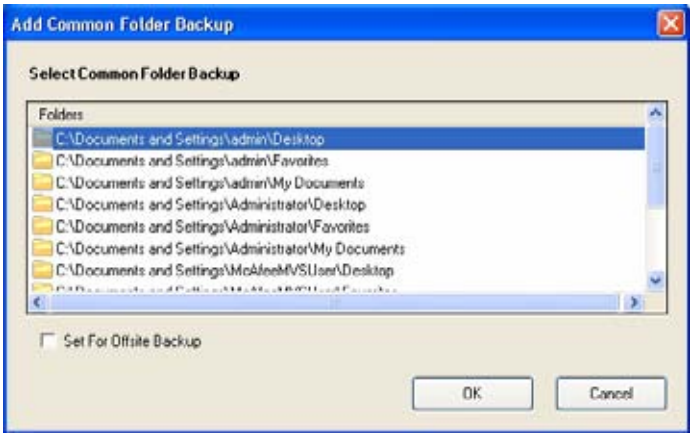
Verifying SonicWALL CDP Operation

The following instructions provide a step by step process for verifying your SonicWALL CDP installation.

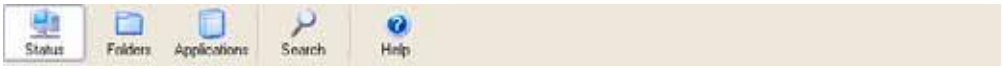
1. If it is not already open, launch the SonicWALL CDP Agent Tool from the Windows Start Menu: **Programs > SonicWALL > SonicWALL Continuous Data Protection > SonicWALL Agent Tool**.
2. In the CDP Agent Tool, click the **Folders** button to enter folders view.

3. At the bottom of the folders view screen, click the **Add Common Folder** link.

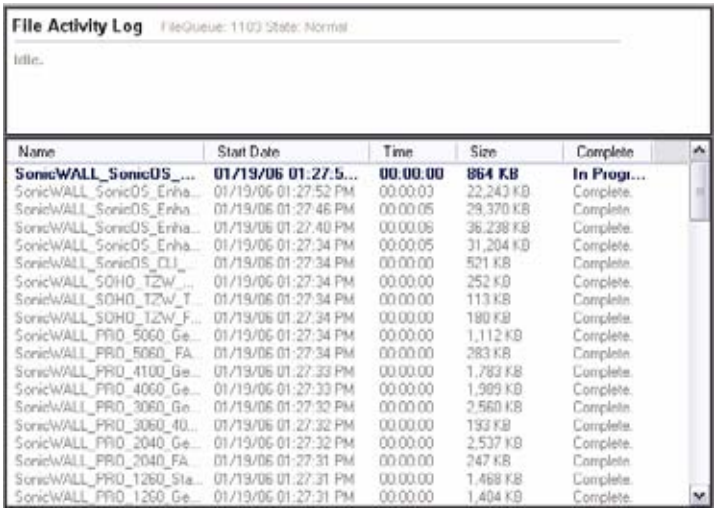
4. Select a common folder from the list such as **Desktop** or **My Documents**.
5. If your installation supports offsite backups (an optional service) and you wish to use this feature, select the **Set for Offsite Backup** checkbox.
6. Click the **OK** button to start a backup.



7. Click the **Status** button to return to System Status view.



8. To verify your common folder backup, view the File Activity Log. The file activity log displays the files that are currently backed up.



Note For more information on configuring your SonicWALL CDP appliance, refer to the *SonicWALL CDP Administrator's Guide.*

Congratulations! You have successfully set up and tested your SonicWALL CDP appliance.

Troubleshooting CDP Agent Tool Operation

If your CDP Agent Tool doesn't start, verify the following configurations:

1. The software must be installed by a user with administrative rights
2. The operating system must be upgraded to the latest released service pack
3. Add exceptions for the following .exe files for your personal firewall:
   - CDPAgentservice.exe
   - Lasso.Client.exe
   - CDPAutoUpdate.exe
4. Verify the Data Execution Prevention (DEP) configuration on Windows Server 2003:
   - Under Windows Services, stop the CDPAgentService.exe service
   - Right click My Computer and select **Properties**, then select the **Advanced** tab
   - Under **Performance**, click **Settings**
   - Select the **DEP** tab
   - Add CDPAgentService.exe, CDPAutoUpdate.exe, and Lasso.Client.exe to the list
   - Click **Apply**
   - Start the Agent Service again
5. Verify that there is no other content filtering or personal firewall software running

SonicWALL CDP Agent Tool Feature Overview

The following section provides instructions for using the SonicWALL CDP Agent Tool. This section contains the following subsections:

- "The Agent Tool Status View" section on page 8
- "The Agent Tool Folders View" section on page 9
- "The Agent Tool Applications View" section on page 13
- "The Agent Tool Search View" section on page 15
- "Agent Tool Help Overview" section on page 18

The Agent Tool Status View

This section contains the following subsections:

- "Changing the Appliance" section on page 9
- "Adding a Folder" section on page 9
- "Adding an Application" section on page 9

The Status view allows you to view current status, change appliances, add folders and add applications.

To view the Status window, click the **Status** button at the top of the Agent Tool interface.

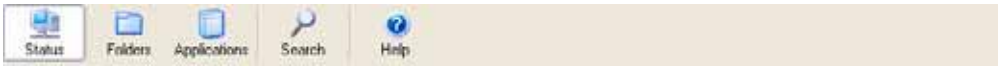
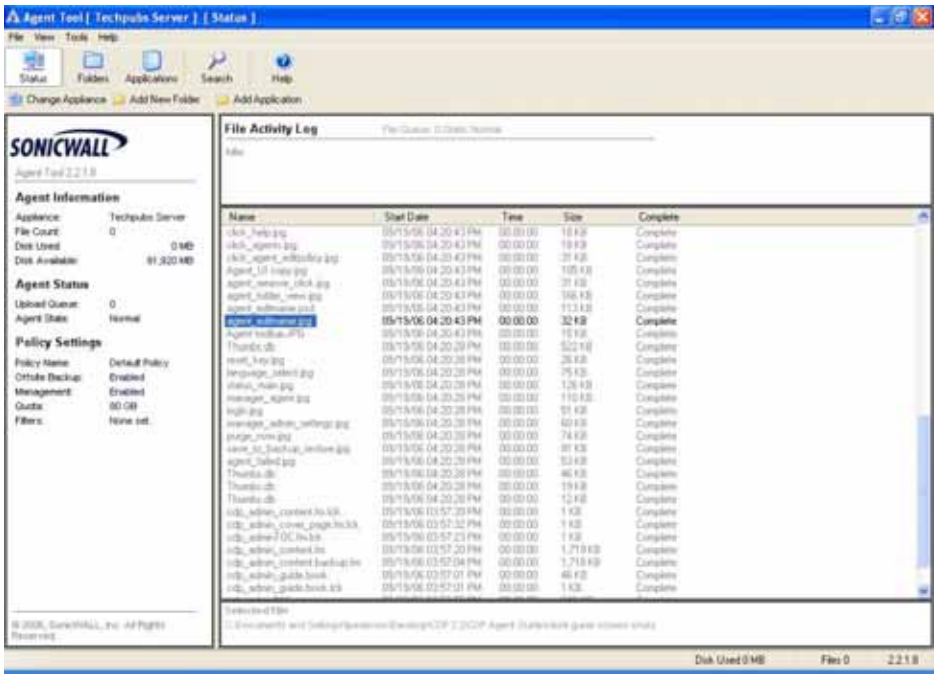


Figure 1 provides an image of the Status window, which displays the File Activity Log.

Figure 1 Status View



Changing the Appliance

1. Click **Change Appliance** at the top of the Agent Tool Status screen.
2. Select the appliance from the **Select SonicWALL CDP Appliance** pop-up window.
3. Click **Connect**.

Adding a Folder

1. Click **Add New Folder** at the top of the Agent Tool Status window.
2. In the **Browse For Folder** pop-up, find the folder you wish to add, or click **Make New Folder**.
3. Click **OK**.

Adding an Application

1. Click **Add Application** at the top of the Agent Tool Status window.
2. In the **Add Application To Backup** pop-up, select the application you wish to add.
3. Select the **Set For Offsite Backup** box to backup your application files to the offsite location. This option is only available if your administrator has enabled the optional Offsite Backup service.
4. Click **OK**.

The Agent Tool Folders View

This section contains the following subsections:

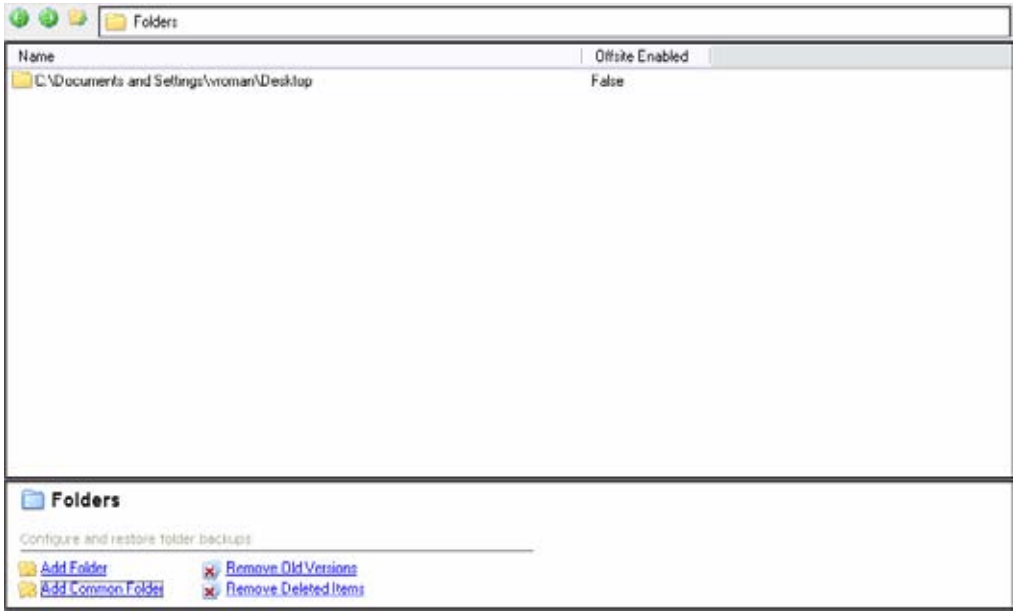
- "Adding a Common Folder" section on page 10
- "Backing Up Files Offsite" section on page 11
- "Removing a Folder" section on page 11
- "Removing Deleted Items" section on page 11
- "Removing Old File Versions" section on page 12
- "Restoring Deleted Folders and Files" section on page 12
- "Restoring Previous File Versions" section on page 12
- "Saving to a Location" section on page 12
- "Viewing Folder Properties" section on page 12

The Folders view allows you to view and edit your backed up folders.

To view the Applications window, click the **Folders** button at the top of the Agent Tool interface.

Figure 3 provides an image of the Folders window.

Figure 2 Agent Tool Folders View



Adding a Folder

1. In the **Folders** window at the bottom of the Agent screen, click **Add Folder**.
2. Select the folder you wish to add in the **Browse For Folder** window.
3. Click the **OK** button. Repeat the process to add more folders.

Adding a Common Folder

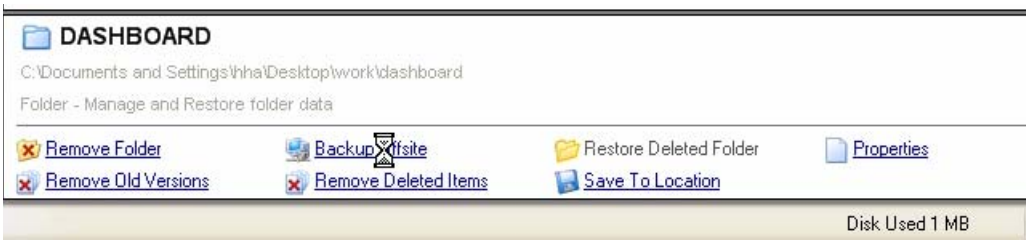
1. In the **Folders** window at the bottom of the Agent Tool screen, click **Add Common Folder**.
2. Select the folder you wish to add in the **Add Common Folder Backup** window.
3. Select the **Set for Offsite Backup** checkbox to backup your files to a secure offsite location.
4. Click the **Add** button. Repeat the process to add more folders.

Note You must have Offsite Service enabled in order to back up files offsite. Offsite Service is available as an optional subscription-based service. Consult with your network administrator if you are unsure about the availability of this service on your SonicWALL CDP appliance.

Backing Up Files Offsite

1. In the **Folders** window, select the folder you wish to backup offsite.
2. At the bottom of the Agent Tool screen, click **Backup Offsite**.
3. Select the **Check for offsite backup** checkbox and click the **Set Status** button.

Note You must have Offsite Service enabled in order to back up files offsite. Offsite Service is available as an optional subscription-based service. Consult with your network administrator if you are unsure about the availability of this service on your SonicWALL CDP appliance.



Files selected for Offsite backup display their status using the following color code:

Offsite Status	
Gray	Pending transfer; the file or folder is marked for offsite backup, but has not yet been copied.
Blue	Parent folder marked for backup; this folder along with all subfolders and files will be backed up.
Orange	Pending update with a newer copy; a version of the file or folder exists offsite, but does not yet contain the latest changes.
Green	Totally synchronized; the latest version of the file on the CDP has been replicated to the offsite storage.

Removing a Folder

1. In the **Folders** window, select the folder you wish to remove from backup.
2. At the bottom of the Agent screen, click **Remove Folder**. A dialog displays asking if you wish to remove the folder.
3. Click the **Yes** button. A progress window displays while the files are being removed form the SonicWALL CDP appliance.

Removing Deleted Items

1. In the **Folders** window, select the folder from which you wish to remove deleted items.
2. At the bottom of the Agent screen, click **Remove Deleted Items**. A dialog displays asking if you wish to remove deleted items from the folder.
3. Click the **Yes** button. A progress window displays while the files are being removed form the SonicWALL CDP appliance.

Removing Old File Versions

1. In the **Folders** window at the bottom of the Agent screen, click **Remove Old Versions**.

Note You can also choose to remove old file versions from specific folders by first clicking the folder in the agent view, and then clicking **Remove Old File Versions**.

2. Click the **Yes** button to remove all old file versions.

Restoring Deleted Folders and Files

1. In the **Folders** window, select the deleted folder or the file you wish to restore.
2. At the bottom of the Agent screen, click **Restore Deleted Folder** or **Restore Deleted File**. A progress window displays while the file or folder is being restored.

Restoring Previous File Versions

1. In the **Folders** window, select the file you wish to restore to a previous version.
2. At the bottom of the Agent screen, click **Restore File Version**.
3. Select the version you wish to restore from the list and click the **Restore** button.
4. Select the location to which you wish to restore the file version, and click the **OK** button.

Saving to a Location

1. In the **Folders** window, select the folder you wish to save.
2. At the bottom of the Agent Tool screen, click **Save to Location**.
3. Choose a location in which to save the folder and click the **OK** button.

Viewing Folder Properties

1. In the **Folders** window, select the folder for which you wish to view properties.
2. At the bottom of the Agent Tool screen, click **Properties**.

The Agent Tool Applications View

This section contains the following subsections:

- "Adding a Client Application for Backup" section on page 14
- "Removing a Client Application from Backup" section on page 14
- "Restoring a Client Application" section on page 15
- "Using Server Applications" section on page 15

Applications, a function within the Agent Tool, allows the administrator to view client applications and server applications assigned for backup.

To view the Applications window, click the **Applications** button at the top of the Agent Tool interface.

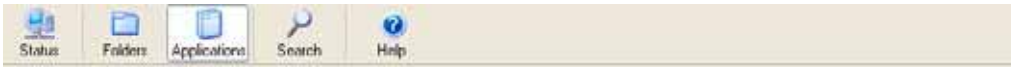
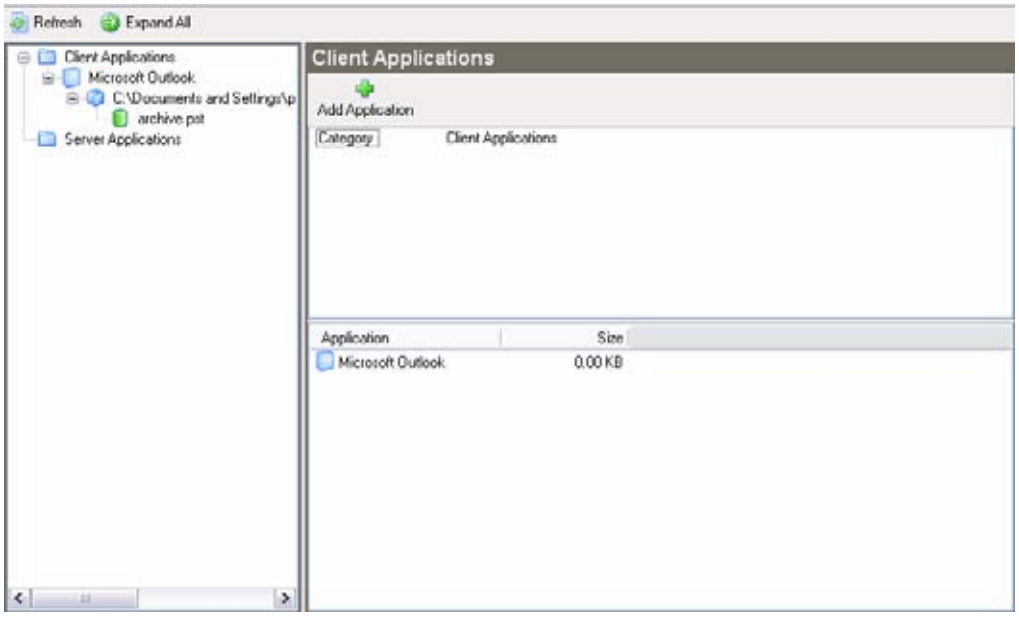


Figure 3 provides an image of the Applications window.

Figure 3 Agent Tool Applications View



Applications allows administrators to view agent and server applications assigned for backup. It provides a list that includes application name, size and most recent backup date. Archives can be restored or removed within Applications.

Adding a Client Application for Backup

Step 1 Click the **Applications** button to view the Client Applications window.

Step 2 Click the **Add Application** button.

Note With the exception of Outlook and Outlook Express, only applications that are installed on your local PC will display in the Add Application Backup dialog box.

Step 3 Select the desired application from the list.

Step 4 Check the **Set For Offsite Backup** option for the folder to be backed up to the Offsite Service.

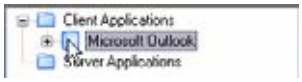
Step 5 Click the **Add** button. Repeat the process to add more applications.

Note If the **Add Application** dialog box is empty, there are no more applications installed on the agent to be backed up.

Removing a Client Application from Backup

Step 1 Click the **Applications** button to view the Client Applications window.

Step 2 Select the desired application from the list in the **Agent** window.



Step 3 Click the **Remove Application** button.

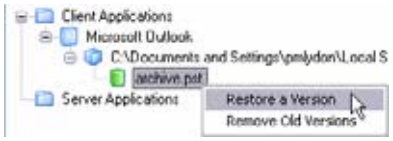
Step 4 A warning screen displays. Click **Yes** to remove the application.

Restoring a Client Application

Step 1 Click the **Applications** button to view the Client Applications window.

Step 2 Click the **Expand All** button to expand the application lists and show archive files.

Step 3 **Right-click** on the archive file for the program you want to restore and select **Restore a Version**.



Step 4 In the **Restore a File Version** window, select the version you with to restore and click the **Restore** button.

Step 5 Select a location to restore the file to and click the **OK** button.

Using Server Applications

Server applications, including Microsoft Exchange, Active Directory, and SQL can be configured for backup or recovery using the SonicWALL CDP Agent Tool.

Refer to the following sections for information about backing up and restoring server applications:

- “Microsoft Exchange User Mailbox Backup and Restore” section on page 19
- “Microsoft Exchange InfoStore Backup and Restore” section on page 34
- “Active Directory Backup and Restore” section on page 55
- “SQL Backup and Restore” section on page 57

The Agent Tool Search View

This section contains the following subsections:

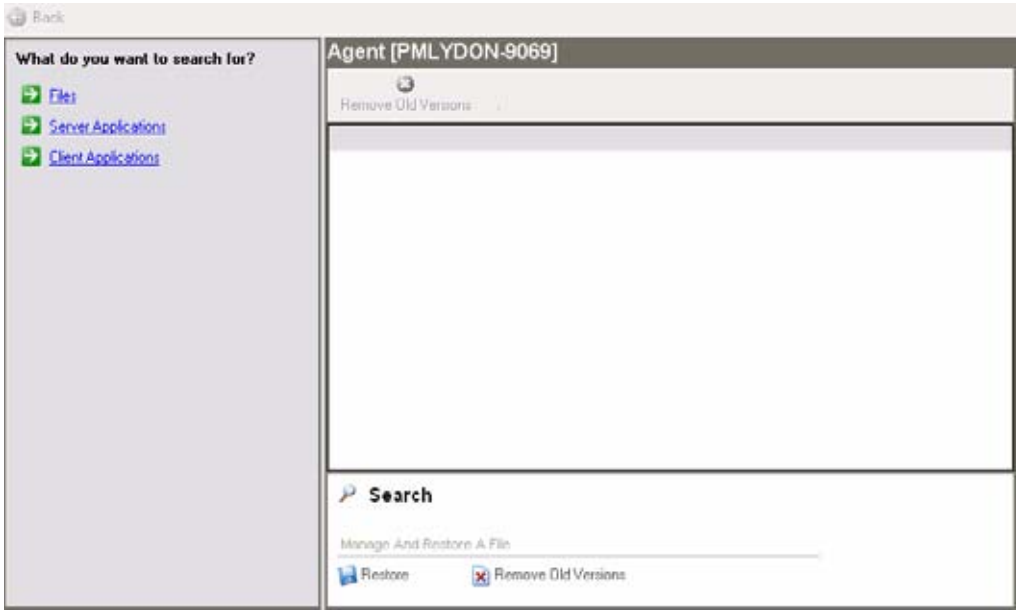
- “Searching for Files” section on page 16
- “Searching Within Server Applications” section on page 17
- “Searching Within Client Applications” section on page 17

Search, a function within the Agent Tool, provides the administrator with the ability to search for data stored on the SonicWALL CDP appliance.

To view the Search window, click the **Search** button at the top of the Agent Tool interface.

Figure 4 provides an image of the Search window

Figure 4 Agent Tool Search View



Searching for Files

Step 1 In the **Search** view, select **Files** form the left-hand window.

Step 2 Select the folder you want to search from the **Folder** drop-down menu, or select **Search All Folders**.

Step 3 Enter a search string in the **All or part of the file name** field.

Step 4 To search a specific date or date-range, select a last modified date from the pre-defined time ranges in the **When was it modified** drop-down menu, or specify your own dates in the drop down menus below.

Step 5 To search for a specific file size or file size-range, select a size from the **What size is it** drop-down menu, or specify your own size or size-range below.

Step 6 Select a value from the **How many backup versions should exist** drop-down menu and enter a number.

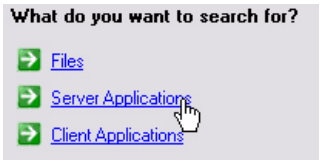
Step 7 To search only for folders marked for Offsite Service backup, select **Yes** from the **Marked for offsite backup** menu.

Step 8 If searching for folders marked for offsite backup, choose to search only for folders which currently exist at the Offsite Service by selecting **Yes** from the **Exists offsite** drop-down menu.

Step 9 Click the **Search** button to start your search.

Searching Within Server Applications

Step 1 In the **Search** view, select **Server Applications** form the left-hand window.

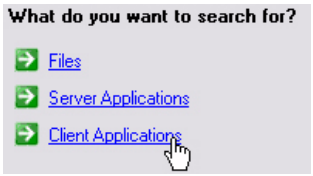


Step 2 Select an application to search from the **Application** drop-down menu.

Step 3 Click the **Search** button to start your search.

Searching Within Client Applications

Step 1 In the **Search** view, select **Client Applications** form the left-hand window.



Step 2 Select an application to search from the **Application** drop-down menu.

Step 3 Click the **Search** button to start your search.

Agent Tool Help Overview

Help, a function within the Agent Tool, redirects users to online SonicWALL CDP help content. To view the help content, click the **Help** button in the Agent Tool toolbar.

Figure 5 provides the Agent Tool view of help content.

Figure 5 Help

Address
http://software.sonicwall.com/Applications/DataProtect/
Go
SONICWALL
COMPREHENSIVE INTERNET SECURITY™
Welcome to the SonicWALL CDP help and download site
Here you will find all the resources necessary to get your SonicWALL CDP enabled and to use it effectively.
Software Downloads
To download the software please click on appropriate name of the software listed below.
CDP Software Tools
Bare Metal Recovery/Local Archiving - Server
Bare Metal Recovery/Local Archiving - Workstation
(Alert! You must use a zip program to unzip the program files before

Managing Server Applications in the Agent Tool

Note The SonicWALL CDP appliance must be specially licensed for server applications.

The following sections describe procedures for backing up and restoring server applications:

- "Microsoft Exchange User Mailbox Backup and Restore" section on page 19
- "Microsoft Exchange InfoStore Backup and Restore" section on page 34
- "Manually Obtaining EsEbcli2.dll For 64-bit Machine" section on page 53
- "Active Directory Backup and Restore" section on page 55
- "SQL Backup and Restore" section on page 57

Microsoft Exchange User Mailbox Backup and Restore

This section describes how to configure and use the Microsoft Exchange User Mailbox Backup and Restore server application in SonicWALL CDP 5.1.

SonicWALL CDP Microsoft Exchange User Mailbox Backup and Restore is a feature that allows you to backup and restore an individual user mailbox on your Microsoft Exchange server. The user mailbox is backed up onto your SonicWALL CDP appliance. You can use this feature by adding the Microsoft Exchange - User Mailbox application to the SonicWALL CDP Agent Tool. From the Agent Tool, you can use the User Mailbox application to configure the backup schedule for one or more user mailboxes, the login credentials for the Exchange server, the parameters for offsite backup, and to restore individual user mailboxes to the Exchange server.

The SonicWALL CDP Microsoft Exchange User Mailbox Backup and Restore feature provides the functionality and flexibility that you need to backup and restore specific user mailboxes, rather than backing up the entire Exchange database. The User Mailbox Backup and Restore feature includes the following capabilities:

- Convenient interface for adding user mailboxes to or deleting them from the backup process
- Ability to set the backup schedule for a group of mailboxes or for individual user mailboxes
- Secure login using credentials to Microsoft Exchange server
- Optional automatic backup of user mailboxes to an offsite location
- Retention of multiple backups for each user mailbox

User Mailbox Backup and Restore backs up and restores messages in the user's Outlook Mailbox, including the Inbox, Drafts, Deleted Items, and Sent Items, as well as messages within all other folders with custom names.

It does not back up the Outlook Calendar, Notes, Contacts, Tasks, Meeting Requests, and Public Folders. It also does not back up locally archived folders.

See the following sections:

- "Platforms that Support User Mailbox Backup and Restore" section on page 20
- "How Does User Mailbox Backup and Restore Work?" section on page 21
- "Installation Prerequisites" section on page 21
- "Adding the User Mailbox Application to the Agent Tool" section on page 25

- "Adding User Mailboxes for Backup" section on page 26
- "Scheduling Backups for User Mailboxes" section on page 27
- "Configuring Access to the Exchange Server" section on page 28
- "Configuring Offsite Backup of User Mailboxes" section on page 29
- "Restoring User Mailboxes" section on page 30
- "Removing User Mailboxes from the Backup Schedule" section on page 33
- "Removing the User Mailbox Application" section on page 33
- "Verifying User Mailbox Backup Activity" section on page 34

Platforms that Support User Mailbox Backup and Restore

The SonicWALL CDP Microsoft Exchange User Mailbox Backup and Restore feature is supported on the following platforms:

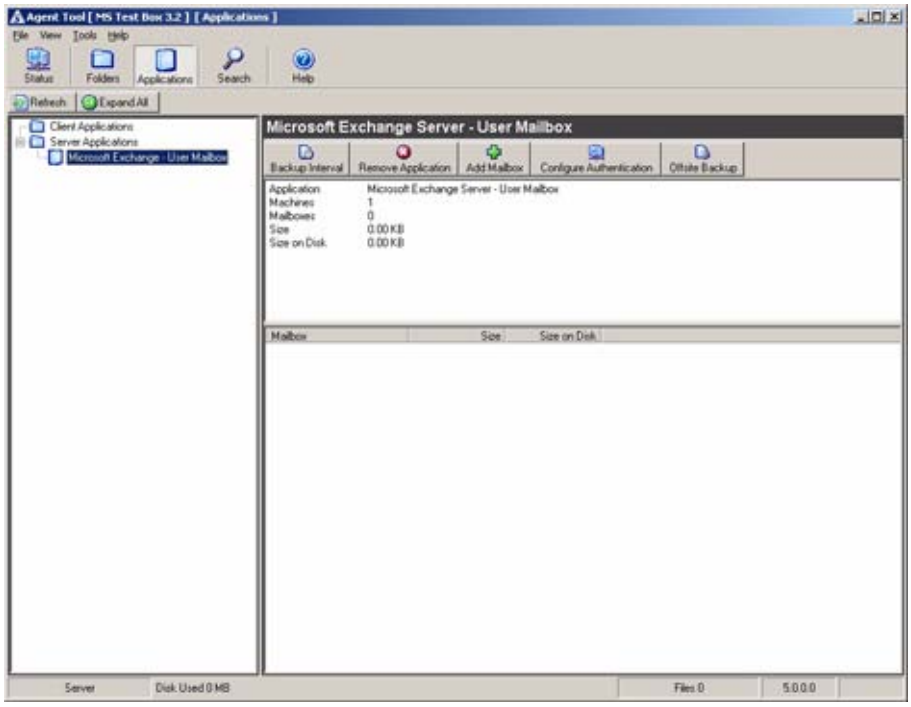
- SonicWALL CDP 110
- SonicWALL CDP 210
- SonicWALL CDP 5040
- SonicWALL CDP 6080
- SonicWALL CDP 1440i
- SonicWALL CDP 2440i
- SonicWALL CDP 3440i
- SonicWALL CDP 4440i

Note The SonicWALL CDP appliance must be specially licensed for server applications. On the SonicWALL CDP 110 and 210 platforms, this feature requires the purchase of the SonicWALL CDP 110/210 5 Server Applications License upgrade. This license allows you to back up five applications that are installed on your server, such as Exchange, SQL, Active Directory, and others.

For related information, see "Installation Prerequisites" on page 21.

How Does User Mailbox Backup and Restore Work?

The SonicWALL CDP Microsoft Exchange User Mailbox Backup and Restore feature is implemented as a server application that is added to the SonicWALL CDP Agent Tool. To use the feature, add the **Microsoft Exchange - User Mailbox** (User Mailbox) application to the SonicWALL CDP Agent Tool from within the Agent Tool user interface. You can then select the application in the left pane of the Agent Tool and access the application controls in the right pane.



The User Mailbox application allows you to add or delete individual user mailboxes for backup, set backup schedules, restore specific backups of individual mailboxes, enter credentials for accessing the Exchange server, and configure offsite backup. You can view log entries in the SonicWALL CDP Agent Tool on the **Status** tab to verify that backups are successful.

Installation Prerequisites

This section lists the necessary prerequisites for successful operation of the SonicWALL CDP Agent Tool with the Microsoft Exchange User Mailbox Backup and Restore feature.

Proper Configuration of Exchange Admin User on Agent

Follow the instructions below to allow mailbox access for proper user mailbox backup/restore in Microsoft Exchange 2003(32bit) and Microsoft Exchange 2007(64bit). On your Agent system, make the Exchange admin user a member of the “Administrators” group, and login to the Exchange system as the Exchange admin user.

See the following subsections for specific instructions:

- Configuration on a 32-bit Machine, page 22
- Configuration on a 64-bit Machine, page 22

See the following Microsoft Knowledge Base articles for more information:

http://support.microsoft.com/kb/556045

http://support.microsoft.com/kb/821897

Configuration on a 32-bit Machine

To configure the Exchange admin user on a 32-bit machine (MS Windows SBS 2003 and MS Exchange 2003), perform the following steps:

Step 1 Create a user in 'Active Directory User and Computer' in the Domain Controller (DC) computer (such as **cdpAdmin**).

Step 2 Add this user (cdpAdmin) to the group 'Backup Operator'.

Step 3 On the Exchange server, launch the Exchange system manager console and navigate to **Servers**.

Step 4 Expand **Servers**, right-click on the server name and then click **Properties**.

Step 5 On the **Security** tab, add the **cdpAdmin** user to the **Group or user names** list.

Step 6 Make sure this user has **Full control** permissions.

Step 7 Logout of the MS Exchange server machine and then log back in as the **cdpAdmin** user.

Step 8 Open SonicWALL CDP Agent Tool, select the **Application** tab, and add **MS Exchange – User Mailbox**.

Step 9 Click the **Configure Authentication** button.Enter the user credentials in the authentication dialog box:

User: Domain\user (yourDomain\cdpAdmin)

Password: password for user cdpAdmin

Configuration on a 64-bit Machine

To configure the Exchange admin user on a 64-bit machine: (MS Windows 2003/2008 and MS Exchange 2007), perform the following steps:

Step 1 Create a user in 'Active Directory User and Computer' in the Domain Controller (DC) computer (such as **cdpAdmin**).

Step 2 Add this user (cdpAdmin) to the group 'Backup Operator'.

Step 3 On the MS Exchange machine, access the Microsoft Exchange Shell by going to **Start > Programs > Microsoft Exchange Server 2007 > Exchange Management Shell**.

Step 4 To set the **Exchange View Only Administrator** role, type the command in the following format:

add-exchangeadministrator <service_account_name> -role ViewOnlyAdmin

An example of this command is:

add-exchangeadministrator cdpAdmin -role ViewOnlyAdmin

Step 5 To set the Send As, Receive As, and Administer Information Store permissions, type the following command:

get-mailboxserver <server_name> | add-adpermission -user <service_account_name> -accessrights GenericRead, GenericWrite -extendedrights Send-As, Receive-As, ms-Exch-Store-Admin

Where:

- **<server_name>** is the Microsoft Exchange2007 server name

- **<service_account_name>** is the user account created in step 1 (cdpAdmin)

An example of this command is:

get-mailboxserver win2k3ee | add-adpermission -user cdpAdmin -accessrights GenericRead, GenericWrite -extendedrights Send-As, Receive-As, ms-Exch-Store-Admin

Step 6 This step only applies if your MS Exchange server is installed on a non-Domain Controller server. On the MS Exchange server machine, to give login access to the **cdpAdmin** user, add the **cdpAdmin** user to the local **Backup Operators** group by performing the following steps:

a. Navigate to **Administrative Tools** > **Computer Management** > **Local Users and Groups**, and right-click on the **Backup Operators** group.

b. Select **Add to Group** and click on the domain user **cdpAdmin**.

Step 7 Log out of the MS Exchange server machine and then log back in as the **cdpAdmin** user.

Step 8 Open the SonicWALL CDP Agent Tool and configure authentication for **MS Exchange – User Mailbox** with the following credentials:

User: Domain\user (yourDomain\cdpAdmin)

Password: password for user cdpAdmin

ESE Backup Client DLL/ CDOEXM Requirements

SonicWALL CDP uses the Exchange Backup and Restore API to access Microsoft Exchange. The Microsoft ESE Backup Client DLL (EsEbCli2.dll) should be installed along with Microsoft Exchange, and must be accessible by SonicWALL CDP Enterprise Manager and Agent Tool. The Collaboration Data Objects for Exchange Management (CDOEXM) APIs are also used to automate the restore procedure, but not required by this feature.

You can copy the EsEbCli2.dll file from your Microsoft installation disk, or download it from Microsoft, or copy it manually from another location into the Sonicwall Continuous Data Protection folder where the client was installed. The default program installation folder location is:

C:\Program Files\SonicWALL\SonicWALL Continuous Data Protection

Note The ESE Backup Client DLL (EsEbCli2.dll) is installed by default under the 32-bit installation. On 64-bit machines you need to manually obtain the EsEbCli2.dll. For more information, see "Manually Obtaining EsEbcli2.dll For 64-bit Machine" on page 53.

Note Version 8.1.240.3 of EsEbcli2.dll is required by SonicWALL CDP.

ExOLEDB / ADO / CDO Requirements

SonicWALL CDP uses **ExOLEDB** to access Microsoft Exchange. The **Exchange OLE DB Provider** should be installed along with Microsoft Exchange, and must be accessible by SonicWALL CDP Enterprise Manager and Agent Tool.

The ADO (ActiveX Data Objects) and CDO (Collaboration Data Objects) APIs are also required by this feature. These are application programming interfaces provided by Microsoft that allow applications to access data stores in a uniform manner. These APIs are included with the Microsoft Exchange installation.

Microsoft Exchange Versions Supported

The following versions of Microsoft Exchange are supported:

- Exchange 2000
- Exchange 2003
- Exchange 2007 (Service Pack 1)

Windows Server Versions Supported

Microsoft Exchange runs on the following versions of Windows Server:

- Windows Server 2000 (Service Pack 4)
- Windows Server 2003 32-bit
- Windows Server 2003 64-bit
- Windows Server 2008 64-bit

Windows Server / Exchange Compatibility

The following table indicates the versions of Exchange Server that are supported on each version of Windows Server:

Windows Server / Exchange Version Compatibility	Windows Server 2000 (Service Pack 4)	Windows Server 2003 32-bit	Windows Server 2003 64-bit	Windows Server 2008 64-bit
Exchange 2000	Supported			
Exchange 2003	Supported - Requires Windows Server Service Pack 4	Supported		
Exchange 2007 (Service Pack 1)			Supported	Supported

Note Refer to the latest SonicWALL CDP Release Notes, available on www.sonicwall.com, for the location of the full support matrix and compatibility information.

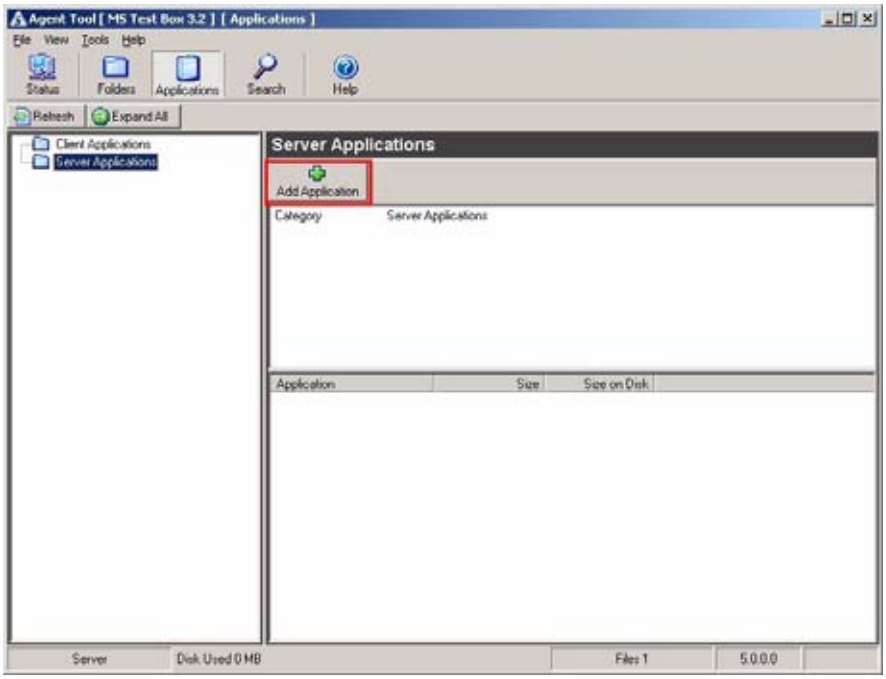
Adding the User Mailbox Application to the Agent Tool

Before you can use the Microsoft Exchange User Mailbox Backup and Restore feature, you need to add the **Microsoft Exchange - User Mailbox** application to the SonicWALL CDP Agent Tool.

Step 1 In the SonicWALL CDP Agent Tool, click the **Applications** tab at the top of the window.

Step 2 In the left pane, select **Server Applications**.

Step 3 In the right pane, click the **Add Application** button.



Step 4 In the **Add Application Backup** dialog box, select **Microsoft Exchange Server - User Mailbox**.

Step 5 Optionally select the **Set for Offsite Backup** checkbox to backup the User Mailbox application data offsite. You can change this setting at any time after adding the User Mailbox application. For information about configuring offsite backup, see "Configuring Offsite Backup of User Mailboxes" on page 29.

Step 6 Click **OK**.

After the User Mailbox application is added, you can access it on the **Applications** tab.

Adding User Mailboxes for Backup

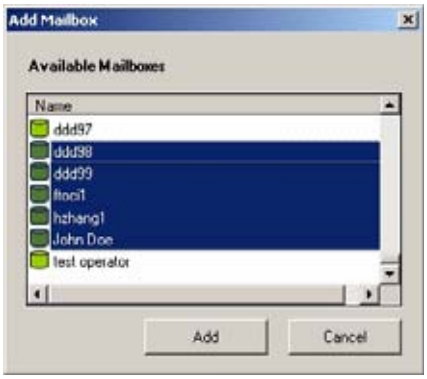
This section describes how to add individual user mailboxes for backup.

Step 1 In the SonicWALL CDP Agent Tool, click the **Applications** tab.

Step 2 In the left pane, expand **Server Applications** and select **Microsoft Exchange - User Mailbox**.

Step 3 In the right pane, click the **Add Mailbox** button.

Step 4 In the **Add Mailbox** dialog box, select one or more mailboxes to backup.



Step 5 Click **Add**.

The selected mailboxes appear in the bottom pane of the User Mailbox application page.

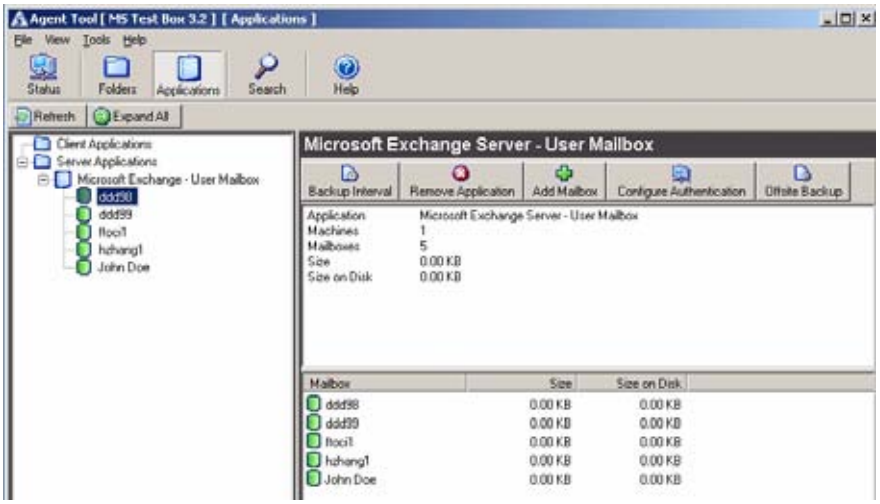
Scheduling Backups for User Mailboxes

This section describes how to configure the backup schedule for user mailboxes.

Step 1 In the SonicWALL CDP Agent Tool, click the **Applications** tab.

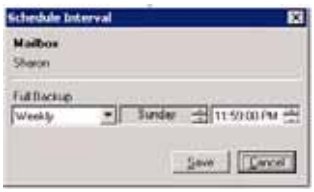
Step 2 In the left pane select the user mailbox for which you want to schedule backups.

Step 3 In the right pane, click the **Backup Interval** button.



Step 4 In the **Schedule Interval** dialog box, select one of the following backup intervals from the drop-down list:

- Monthly – The backup occurs once a month.
  - Select the date of the month on which to run the backup. Backups scheduled for dates at the end of the month, such as the 31st, will be run on the last day of the month for shorter months.
  - Select the time at which to start the backup.
- Biweekly – The backup occurs every two weeks.
  - Select the day of the week, Sunday through Saturday, on which to run the backup.
  - Select the time at which to start the backup.
- Weekly – The backup occurs every week.
  - Select the day of the week, Sunday through Saturday, on which to run the backup.
  - Select the time at which to start the backup.
- Daily – The backup occurs every day at the scheduled time.
  - Select the time at which to start the backup.

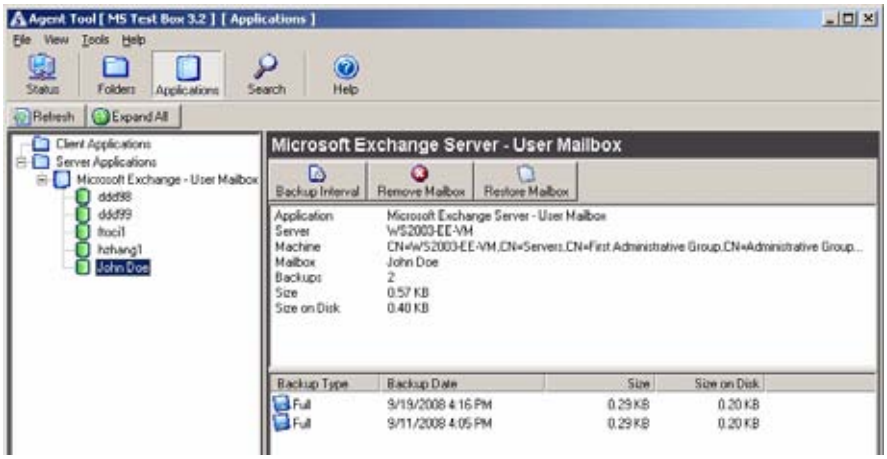


Step 5 Click **Save**.

Step 6 To view the backup status in the User Mailbox application window, select a user mailbox or **Microsoft Exchange - User Mailbox** in the left pane and then click the **Refresh** button.

Note The window does not refresh automatically after the backup occurs.

The bottom pane of the User Mailbox application window displays the backup dates and the amount of disk space used for the selected mailbox.



Configuring Access to the Exchange Server

This section describes how to configure access between the SonicWALL CDP appliance and the Exchange server where the user mailboxes reside. You can use the default **Use Trusted Connection** setting, which allows access to the Exchange server without providing credentials. Or, you can provide the user name and password credentials for accessing the Exchange server. In either case, you can test the connection between the SonicWALL CDP appliance and the Exchange server.

Note If the **Use Trusted Connection** setting is selected, the actual backup process uses the local SYSTEM account to access the Microsoft Exchange database.

Configuring Login Credentials for the Exchange Server

Before configuring the User Mailbox application to use credentials when accessing the Exchange server, you must first configure the credentials on the Exchange server. The user name must have appropriate privileges to access user mailbox data on the Exchange server. For more information about configuring users and access privileges on Microsoft Exchange, see the Microsoft knowledge base articles at:

http:/support.microsoft.com/kb/821897

http://support.microsoft.com/kb/556045

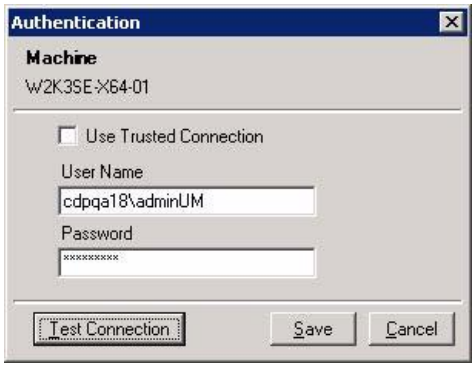
To configure a user name and password for SonicWALL CDP to use when accessing the Exchange server, perform the following steps:

Step 1 In the SonicWALL CDP Agent Tool, click the **Applications** tab.

Step 2 In the left pane under **Server Applications**, select **Microsoft Exchange - User Mailbox**.

Step 3 In the right pane, click the **Configure Authentication** button.

Step 4 In the **Authentication** dialog box, to configure the access credentials for the Exchange server, clear the **Use Trusted Connection** checkbox. The **User Name** and **Password** fields become active.



Step 5 Type the domain and user name into the **User Name** field, in the form **domain\username**.

This account must have privileges for accessing user mailbox data on the Exchange server (see KB821897).

Step 6 Type the password into the **Password** field.

Step 7 To test the connection between the User Mailbox application and the Exchange server, click the **Test Connection** button.

Step 8 To save this configuration, click **Save**.

Configuring Offsite Backup of User Mailboxes

This section describes how to configure the User Mailbox application to backup user mailboxes to an offsite SonicWALL CDP appliance. Offsite backup settings must already be configured in SonicWALL CDP Enterprise Manager, and the offsite appliance must be available. For instructions and information, see the *SonicWALL CDP Administrator's Guide*.

Step 1 In the SonicWALL CDP Agent Tool, click the **Applications** tab.

Step 2 In the left pane under **Server Applications**, select **Microsoft Exchange - User Mailbox**.

Step 3 In the right pane, click the **Offsite Backup** button.

Step 4 In the **Offsite Status** dialog box, select the **Check for offsite backup** checkbox.

Step 5 Click **Set Status**.

Restoring User Mailboxes

This section describes how to restore an individual user mailbox backup to the Exchange server. During the restore process, the backed up data is first copied to a temporary location and then copied to the Exchange server.

Note The current account must have privileges to access the Exchange server. See KB821897.

A mailbox must exist in Exchange in order for the restore to work properly. For cases in which the mailbox has been deleted from Exchange, special procedures are necessary.

See the following sections:

- "Restoring the Contents of an Existing Mailbox" on page 30
- "Restoring Deleted Mailboxes in Exchange 2003" on page 32
- "Restoring Deleted Mailboxes in Exchange 2007" on page 32

Restoring the Contents of an Existing Mailbox

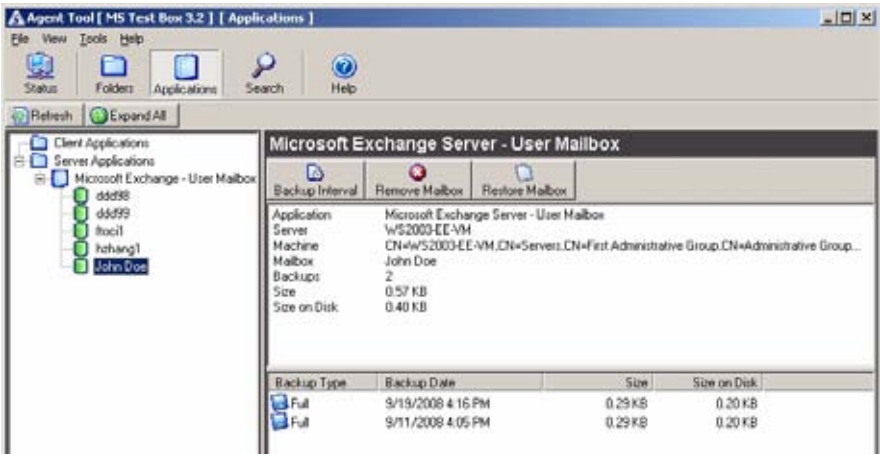
To restore an individual user mailbox to the Exchange server, perform the following steps:

Step 1 Login as **cdpadmin**.

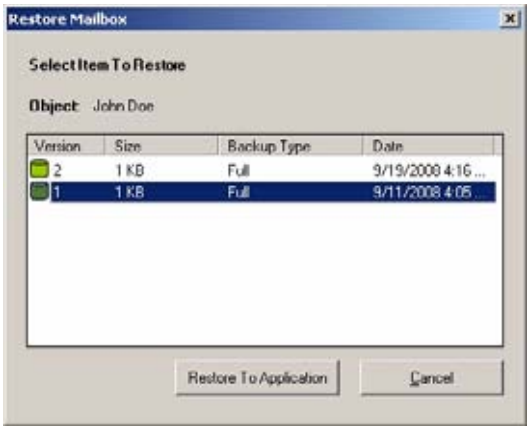
Step 2 In the SonicWALL CDP Agent Tool, click the **Applications** tab.

Step 3 In the left pane under **Microsoft Exchange - User Mailbox**, select the user mailbox that you want to restore.

Step 4 In the right pane, click the **Restore Mailbox** button.



Step 5 In the **Restore Mailbox** dialog box, select the backup that you want to restore.

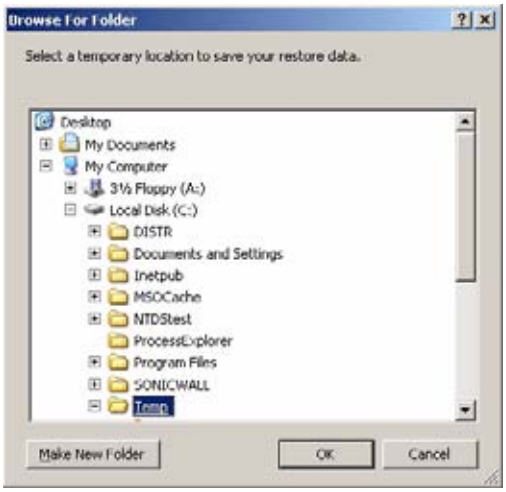


Step 6 Click **Restore To Application**.

The **Browse For Folder** dialog box appears.

Step 7 In the **Browse For Folder** dialog box, do one of the following to select a temporary location:

- Select an existing folder to store the temporary copy of the user mailbox data
- Click **Make New Folder** to create a new folder for the temporary data



Step 8 Click **OK**.

The application displays a progress bar as the backed up data is copied to the temporary folder and then to the user's mailbox on the Exchange Server. When the restore process is complete, the progress bar dialog box closes and the **Restore Completed** dialog box is displayed.

Step 9 Click **OK** in the **Restore Completed** dialog box.

Note After the data is restored to the Exchange server, you may need to synchronize your local mail client (Outlook) in order to see restored emails.

Restoring Deleted Mailboxes in Exchange 2003

Once a mailbox is deleted from Exchange, there is no container to hold the emails, even though SonicWALL CDP has a copy of the mailbox backup. This container (in our case an empty mailbox) must be created prior to restoring the mailbox.

In Exchange 2003, you can either “purge” or “delete” a user mailbox. Mailbox deletion leaves the user account in Exchange, but purging a mailbox removes the user account from Exchange. In either case, the user account in Active Directory still exists (unless removed separately). See the following procedures for each case:

- “Restoring a Deleted Mailbox in Exchange 2003” on page 32
- “Restoring a Purged Mailbox in Exchange 2003” on page 32

Restoring a Deleted Mailbox in Exchange 2003

Step 1 Log in as administrator to the Exchange server.

Step 2 In Exchange, right-click the user mailbox and select **Reconnect**. This reconnects the mailbox to the Active Directory account.

Step 3 Follow the instructions in the procedure “Restoring the Contents of an Existing Mailbox” on page 30 to restore the mailbox.

Restoring a Purged Mailbox in Exchange 2003

Step 1 Obtain the user account information from Active Directory.

Step 2 Use this information to create a new user mailbox in Exchange.

Step 3 Log into the new mailbox via Outlook or Webmail as the user, or have the user log in.

Step 4 Follow the instructions in the procedure “Restoring the Contents of an Existing Mailbox” on page 30 to restore the mailbox.

Restoring Deleted Mailboxes in Exchange 2007

Once a mailbox is deleted from Exchange, there is no container to hold the emails, even though SonicWALL CDP has a copy of the mailbox backup. This container (in our case an empty mailbox) must be created prior to restoring the mailbox.

In Exchange 2007, deleting a user mailbox removes the user account from both Exchange and Active Directory. In this case, there are two methods that can be used to restore a user mailbox. See the following procedures for each case:

- “Restoring a Deleted Mailbox by First Restoring Active Directory” on page 32
- “Restoring a Deleted Mailbox by Creating a New Active Directory Account” on page 33

Restoring a Deleted Mailbox by First Restoring Active Directory

Step 1 Use SonicWALL CDP to restore Active Directory to a version containing the user account.

Step 2 Follow the instructions in the procedure “Restoring the Contents of an Existing Mailbox” on page 30 to restore the mailbox.

Restoring a Deleted Mailbox by Creating a New Active Directory Account

Step 1 Create a new Active Directory user account using the same user name as the deleted account.

Step 2 Create a new user mailbox in Exchange using the same account name and connect to the Active Directory account.

Step 3 Follow the instructions in the procedure "Restoring the Contents of an Existing Mailbox" on page 30 to restore the mailbox.

Note This process might take a long time to complete due to the recovery procedure between Active Directory and Exchange.

Removing User Mailboxes from the Backup Schedule

This section describes how to remove a user mailbox from the list of mailboxes scheduled for backup.

Note Removing a user mailbox also removes all existing backups of that mailbox.

Step 1 In the SonicWALL CDP Agent Tool, click the **Applications** tab.

Step 2 In the left pane under **Microsoft Exchange - User Mailbox**, select the user mailbox that you want to remove from the backup schedule.

Step 3 In the right pane, click the **Remove Mailbox** button.

Step 4 Click **Yes** in the confirmation dialog box.

Removing the User Mailbox Application

This section describes how to remove the User Mailbox application from the SonicWALL CDP Agent Tool.

Note Removing the User Mailbox application also removes all existing mailbox backups.

Step 1 In the SonicWALL CDP Agent Tool, click the **Applications** tab.

Step 2 In the left pane, select **Microsoft Exchange - User Mailbox**.

Step 3 In the right pane, click the **Remove Application** button.

Step 4 Click **Yes** in the confirmation dialog box.

Verifying User Mailbox Backup Activity

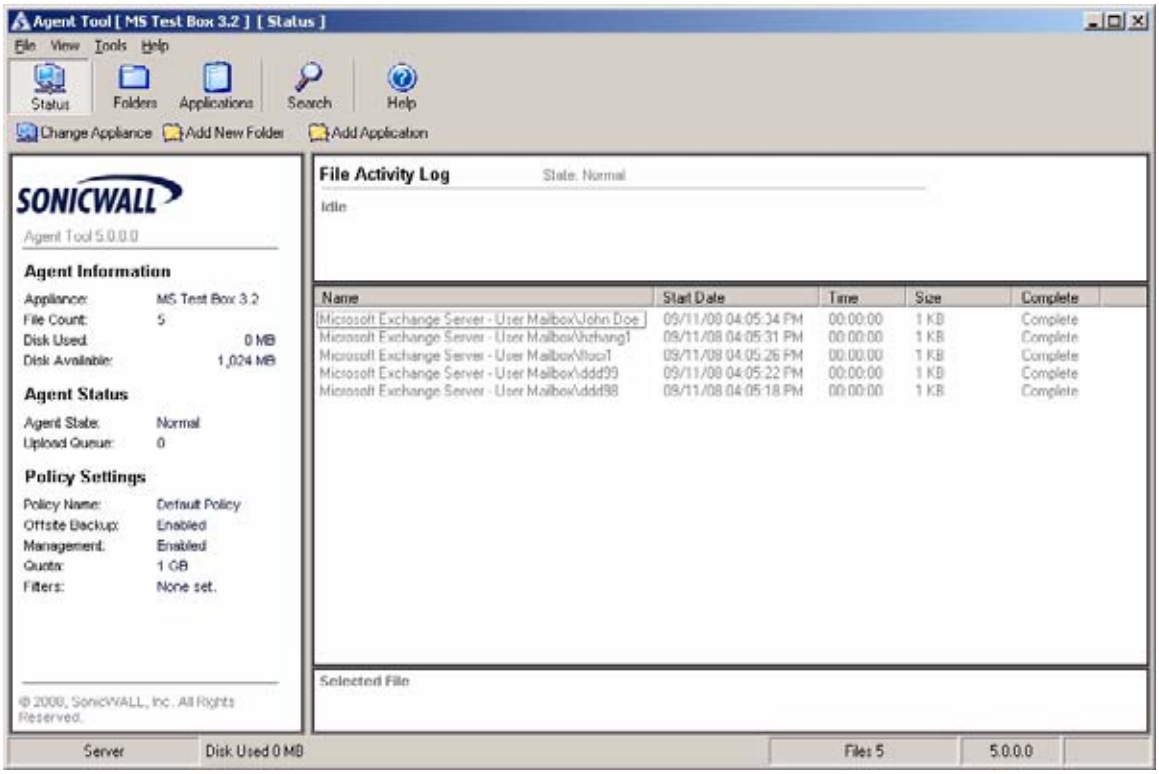
This section describes how to tell if your user mailbox backups are working correctly. You can view log entries showing the backups in the **Status** page of the SonicWALL CDP Agent Tool.

You should see log entries showing backups right after adding one or more user mailboxes to the backup schedule, and then after each scheduled backup.

Step 1 In the SonicWALL CDP Agent Tool, click the **Status** tab at the top of the window.

Step 2 View the log entries in the bottom right pane.

Each related entry contains the application name in the **Name** column.



Microsoft Exchange InfoStore Backup and Restore

This section describes how to configure and use the Microsoft Exchange InfoStore Backup and Restore server application in SonicWALL CDP 5.1. SonicWALL CDP Microsoft Exchange InfoStore Backup and Restore is a feature that allows you to backup and restore a Microsoft Exchange Storage Group. The InfoStore is backed up onto your SonicWALL CDP appliance. You can use this feature by adding the Microsoft Exchange Server - InfoStore application to the SonicWALL CDP Agent Tool. From the Agent Tool, you can use the InfoStore application to configure the backup schedule, the parameters for offsite backup and to restore the Microsoft Exchange Storage Group back to your machine.

Note The SonicWALL CDP appliance must be licensed for server applications.

The SonicWALL CDP Microsoft Exchange InfoStore Backup and Restore feature provides the functionality and flexibility that you need to backup and restore a Microsoft Exchange Storage Group. The InfoStore Backup and Restore feature includes the following capabilities:

- Convenient interface for adding InfoStore to or removing it from the backup process
- Ability to set and manage the backup schedule
- Optional automatic backup to an offsite location
- Retention of multiple backup versions

See the following sections for information about InfoStore:

- "Supported Platforms for InfoStore" on page 35
- "How Does InfoStore Backup and Restore Work?" on page 36
- "Installation Prerequisites for the InfoStore Server Application" on page 36
- "Adding the InfoStore Application to the Agent Tool" on page 38
- "Configuring Storage Group Backup" on page 39
- "Offsite Backup of Storage Group" on page 43
- "Restoring a Storage Group" on page 44
- "Removing Storage Group from the Backup Schedule" on page 51
- "Removing the InfoStore Application" on page 52
- "Verifying InfoStore Backup Activity" on page 53

Supported Platforms for InfoStore

The SonicWALL CDP Microsoft Exchange InfoStore Backup and Restore feature is supported on the following platforms:

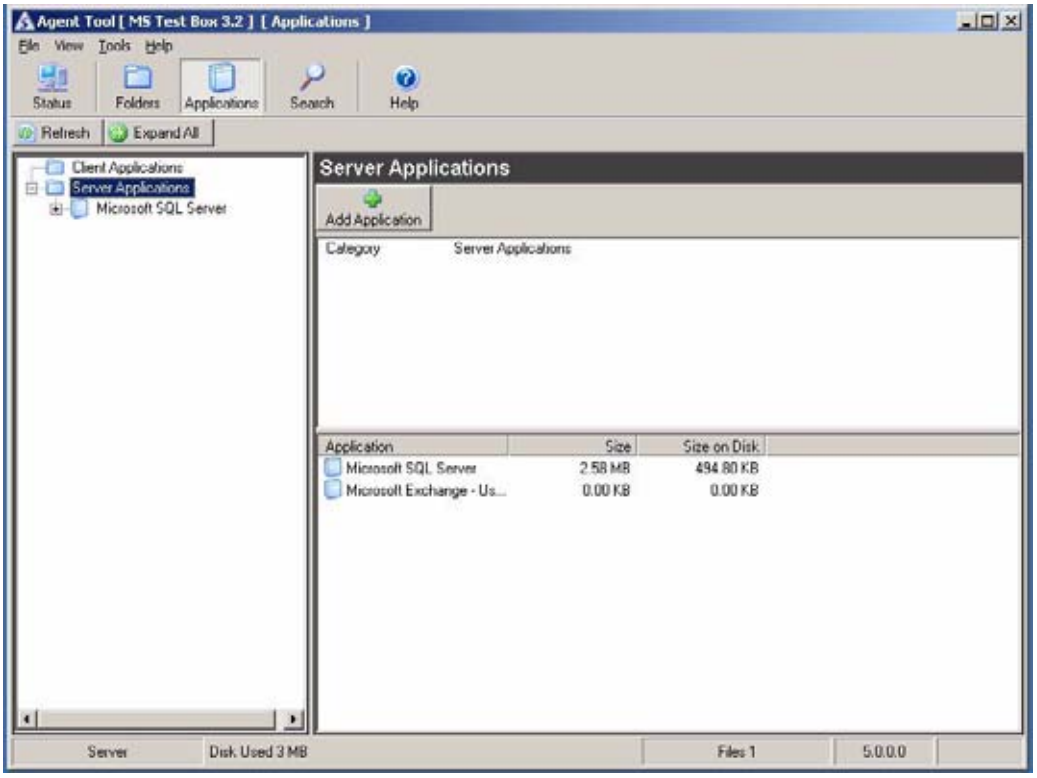
- SonicWALL CDP 110
- SonicWALL CDP 210
- SonicWALL CDP 5040
- SonicWALL CDP 6080
- SonicWALL CDP 1440i
- SonicWALL CDP 2440i
- SonicWALL CDP 3440i
- SonicWALL CDP 4440i

Note The SonicWALL CDP appliance must be specially licensed for server applications. On the SonicWALL CDP 110 and 210 platforms, this feature requires the purchase of the SonicWALL CDP 110/210 5 Server Applications License upgrade. This license allows you to back up five applications that are installed on your server, such as Exchange, SQL, Active Directory, and others.

For related information, see "Installation Prerequisites for the InfoStore Server Application" on page 36.

How Does InfoStore Backup and Restore Work?

The SonicWALL CDP Microsoft Exchange InfoStore Backup and Restore feature is implemented as a server application that is added to the SonicWALL CDP Agent Tool. To use the feature, add the **Microsoft Exchange Server - InfoStore** application to the SonicWALL CDP Agent Tool from within the Agent Tool user interface. You can then select the application in the left pane of the Agent Tool and access the application controls in the right pane.



The InfoStore application allows you to add or remove individual Microsoft Exchange Storage Groups for backup, set backup schedules, restore specific backups of Exchange Storage Groups, and configure offsite backup. You can view log entries in the SonicWALL CDP Agent Tool under the **Status** tab to verify that backups were successful.

Installation Prerequisites for the InfoStore Server Application

This section lists the necessary prerequisites for successful installation and operation of the Microsoft Exchange InfoStore server application on the SonicWALL CDP Agent Tool.

Turn Off Circular Logging

Circular logging allows the Exchange server to overwrite transaction log files after the data that the log files contain has been committed to the database. However, if circular logging is enabled, you can recover Exchange server data only up until the last full backup. Additionally, incremental or differential backups will no longer be allowed. For more information, see the following:

- http://support.microsoft.com/kb/314605
- http://technet.microsoft.com/en-us/library/bb331968.aspx

Note SonicWALL recommends that the circular logging feature in MS Exchange be turned off for all platforms when the SonicWALL CDP Agent is installed. Circular logging is enabled by default on Windows Server 2003/2008 SBS.

The procedure for turning off circular logging applies to the following system configuration:

- 32-bit machine: (MS Windows SBS 2003 and MS Exchange 2003)
- 64-bit machine: (MS Windows SBS 2008 and MS Exchange 2007)

To turn off circular logging, perform the following steps:

Step 1 Start the Exchange Management Console.

Step 2 In the console tree, expand **Server Configuration**, and then click **Mailbox**.

Step 3 In the work pane, right-click the storage group for which you want to disable circular logging, and then click **Properties**. The <Storage Group Name> Properties dialog box appears.

Step 4 Clear the **Enable circular logging** check box.

Step 5 Click **OK**.

Step 6 To make your changes to the circular logging settings effective, restart the Microsoft Exchange Information Store service, or dismount and then mount all of the databases in the storage group.

ESE Backup Client DLL/ CDOEXM Requirements

SonicWALL CDP uses the Exchange Backup and Restore API to access Microsoft Exchange. The Microsoft ESE Backup Client DLL (EsEbCli2.dll) should be installed along with Microsoft Exchange, and must be accessible by SonicWALL CDP Enterprise Manager and Agent Tool. The Collaboration Data Objects for Exchange Management (CDOEXM) APIs are also used to automate the restore procedure, but not required by this feature.

You can copy the EsEbCli2.dll file from your Microsoft installation disk, or download it from Microsoft, or copy it manually from another location into the Sonicwall Continuous Data Protection folder where the client was installed. The default program installation folder location is:

C:\Program Files\SonicWALL\SonicWALL Continuous Data Protection

Note The ESE Backup Client DLL (EsEbCli2.dll) is installed by default under the 32-bit installation. On 64-bit machines you need to manually obtain the EsEbCli2.dll. For more information, see "Manually Obtaining EsEbcli2.dll For 64-bit Machine" on page 53.

Note Version 8.1.240.3 of EsEbcli2.dll is required by SonicWALL CDP.

Supported Microsoft Exchange and Server Versions

Microsoft Exchange Versions Supported

The following versions of Microsoft Exchange are supported:

- Exchange 2000
- Exchange 2003

- Exchange 2007 (Service Pack 1)

Windows Server Versions Supported

Microsoft Exchange Server runs on the following versions of Windows Server:

- Windows Server 2000 (Service Pack 4)
- Windows Server 2003 32-bit
- Windows Server 2003 64-bit
- Windows Server 2008 64-bit

Windows Server / Exchange Compatibility

The following table indicates the versions of Exchange that are supported on each version of Windows Server:

Windows Server / Exchange Version Compatibility	Windows Server 2000 (Service Pack 4)	Windows Server 2003 32-bit	Windows Server 2003 64-bit	Windows Server 2008 64-bit
Exchange 2000	Supported			
Exchange 2003	Supported - Requires Windows Server Service Pack 4	Supported		
Exchange 2007 (Service Pack 1)			Supported	Supported

Note Refer to the latest SonicWALL CDP Release Notes, available on www.sonicwall.com, for the location of the full support matrix and compatibility information.

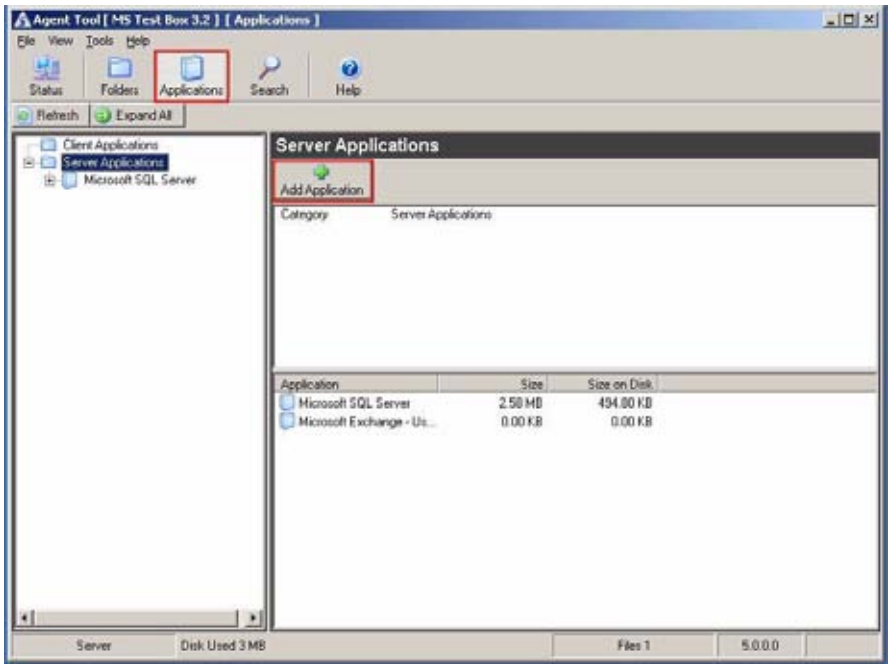
Adding the InfoStore Application to the Agent Tool

Before you can use the Microsoft Exchange InfoStore Backup and Restore feature, you need to add the **Microsoft Exchange Server - InfoStore** application to the SonicWALL CDP Agent Tool. Once the **Microsoft Exchange Server - InfoStore** application is configured, it can be used to add a Microsoft Exchange Storage Group for backup.

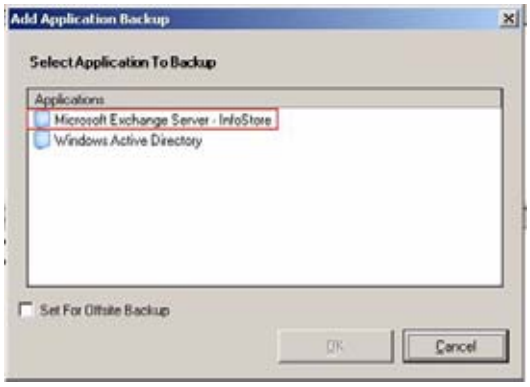
Step 1 In the SonicWALL CDP Agent Tool, click the **Applications** tab at the top of the window.

Step 2 In the left pane, select **Server Applications**.

Step 3 In the right pane, click the **Add Application** button.



Step 4 In the **Add Application Backup** dialog box, select **Microsoft Exchange Server - InfoStore**.



Step 5 Optionally select the **Set for Offsite Backup** checkbox to backup the InfoStore application data offsite. You can change this setting at any time after adding the InfoStore application. For information about configuring offsite backup, see "Offsite Backup of Storage Group" on page 43.

Step 6 Click **OK**.

After the InfoStore application is added, you can access it on the **Applications** tab.

Configuring Storage Group Backup

This section contains the following subsections:

- "Adding Storage Group for Backup" section on page 40
- "Scheduling Backups" section on page 41

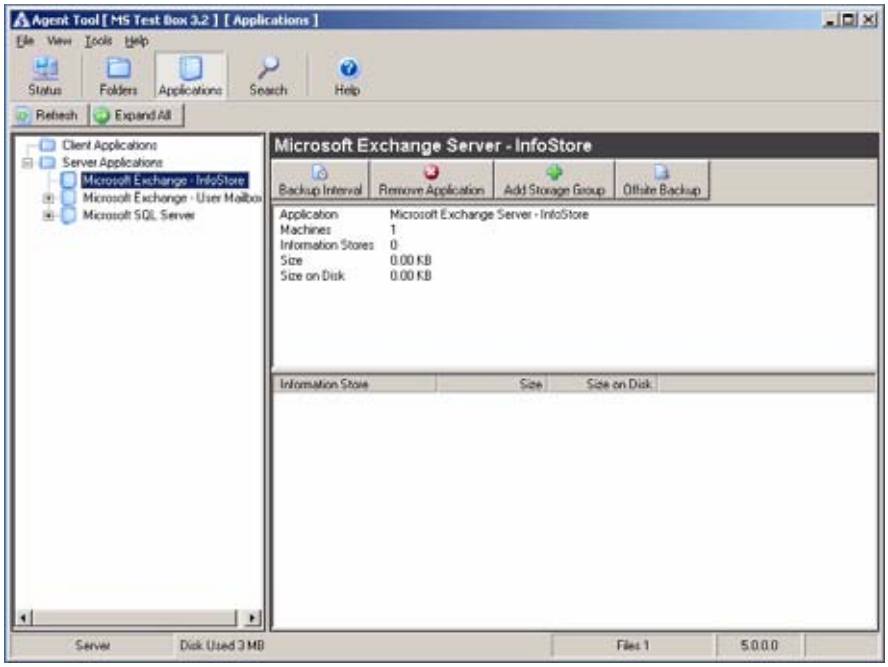
Adding Storage Group for Backup

Once the **Microsoft Exchange Server - InfoStore** application is configured, it can be used to add a Microsoft Exchange Server for backup. To avoid confusion between the **Microsoft Exchange Server - InfoStore** application and the actual Microsoft Exchange Server that requires a backup, the latter is referred to as **Storage Group** under the CDP Agent Tool Graphic User Interface.

Step 1 In the SonicWALL CDP Agent Tool, click the **Applications** tab.

Step 2 In the left pane, expand **Server Applications** and select **Microsoft Exchange - InfoStore**.

Step 3 In the right pane, click the **Add Storage Group** button.



Step 4 In the **Add Storage Group** dialog box, select the Storage Group to backup.

Step 5 Click **Add**.

The selected storage group appear in the bottom pane of the InfoStore application page.

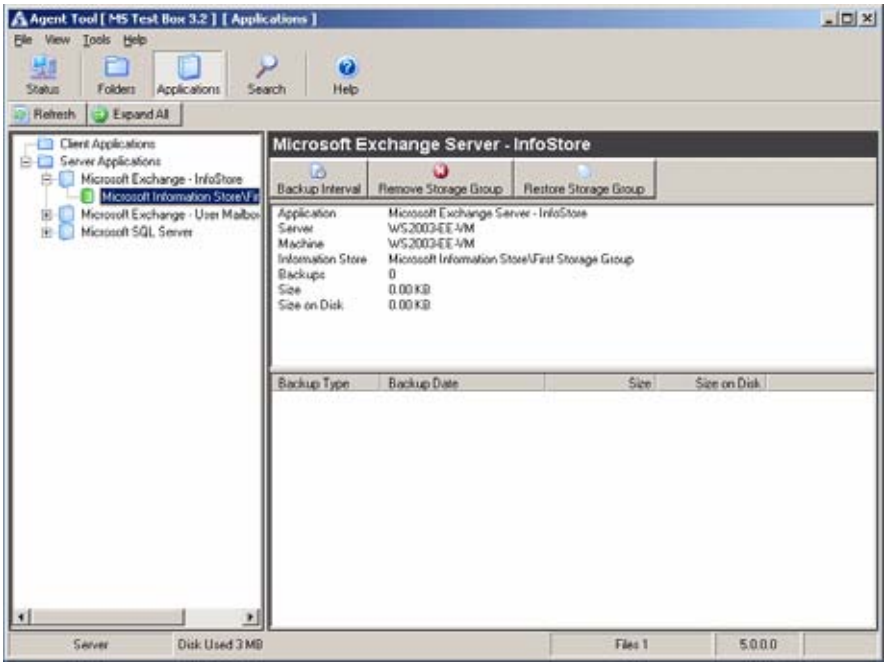
Scheduling Backups

This section describes how to configure the backup schedule for InfoStore.

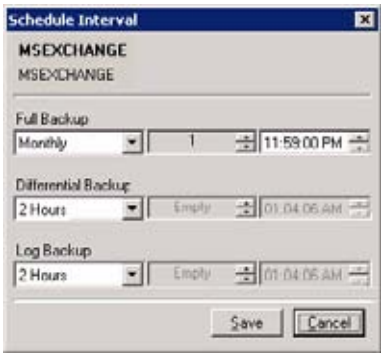
Step 1 In the SonicWALL CDP Agent Tool, click the **Applications** tab.

Step 2 In the left pane, select the Storage Group for which you want to schedule backups.

Step 3 In the right pane, click the **Backup Interval** button.



Step 4 In the **Schedule Interval** dialog box, configure the settings for the backup schedule:



Select one of the following backup intervals from the **Full Backup** drop-down list:

- Monthly – The backup occurs once a month.
  - Select the date of the month on which to run the backup. Backups scheduled for dates at the end of the month, such as the 31st, will be run on the last day of the month for shorter months.
  - Select the time at which to start the backup.
- Biweekly – The backup occurs every two weeks.
  - Select the day of the week, Sunday through Saturday, on which to run the backup.

  - Select the time at which to start the backup.
- Weekly – The backup occurs every week.
  - Select the day of the week, Sunday through Saturday, on which to run the backup.
  - Select the time at which to start the backup.
- Daily – The backup occurs every day at the scheduled time.
  - Select the time at which to start the backup.
- Hourly – You can select 12, 6, 4, 3, or 2 hours, 1 hour, or a half hour (30 minutes). The backup occurs every day at the scheduled time.
  - Select the time at which to start the backup.

Step 5 Select one of the following backup intervals from each of the **Differential Backup** and **Log Backup** drop-down lists:

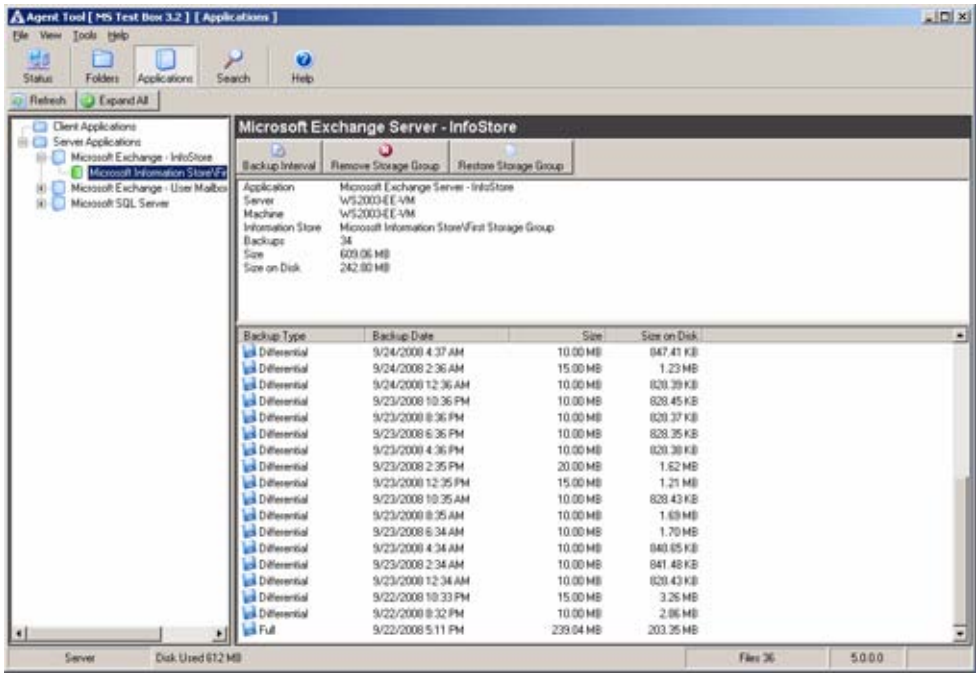
- Daily – The backup occurs every day at the scheduled time.
  - Select the time at which to start the backup.
- Hourly – You can select 12, 6, 4, 3, or 2 hours, 1 hour, or a half hour (30 minutes). The backup occurs every day at the scheduled time.
  - Select the time at which to start the backup.
- Never – No backups will occur.

Step 6 Click **Save**.

Step 7 To view the backup status in the InfoStore application window, select a storage group or **Microsoft Exchange - InfoStore** in the left pane and then click the **Refresh** button.

Note The window does not refresh automatically after the backup occurs.

The bottom pane of the InfoStore application window displays the backup dates and the amount of disk space used for the selected group.



Offsite Backup of Storage Group

The SonicWALL CDP Offsite Data Backup Service is an optional offsite backup and recovery solution that stores data in a secure data center, and can be purchased for an additional fee. This section describes the basics of the offsite backup. For more information, see the SonicWALL CDP Offsite Data Backup Service data sheet at: <http://www.sonicwall.com/downloads/DS_CDP_Offsite_US_060507.pdf>

Offsite Backup Quota

The SonicWALL CDP Offsite Data Backup provides different services, ranging from 5 to 100 GB of quota. You need to make sure that the total size of all of your backups does not exceed quota limit. If quota is exceeded the consequent backup will fail, the **Quota Exceeded Error** message will be displayed, and the status for the last backup will changes to **Quota Exceeded**. You will receive an E-mail notification informing you of the failed backup attempt. You can free up your storage space by removing some of the old backups or by purchasing additional quota. For more information, see the *SonicWALL CDP Administrator's Guide*.

Configuring Offsite Backup of Storage Group

This section describes how to configure the InfoStore application to backup Storage Groups to an offsite SonicWALL CDP appliance. Offsite backup settings must already be configured in SonicWALL CDP Enterprise Manager, and the offsite appliance must be available. For instructions and information, see the *SonicWALL CDP Administrator's Guide*.

Step 1 In the SonicWALL CDP Agent Tool, click the **Applications** tab.

Step 2 In the left pane under **Server Applications**, select **Microsoft Exchange - InfoStore**.

Step 3 In the right pane, click the **Offsite Backup** button.

Step 4 In the **Offsite Status** dialog box, select the **Check for offsite backup** checkbox.

Step 5 Click **Set Status**.

Restoring a Storage Group

This section describes how to restore an individual Storage Group. You can restore the Storage Group in two ways:

- Restore to Application - Copies the data directly to the Exchange database
- Restore to Disk - Copies the data to a folder on the local disk, then another CDP tool is used to copy it to the Exchange database

A storage group must exist in Exchange in order for the restore to work properly. For cases in which the storage group has been deleted from Exchange, special procedures are necessary.

During the restore process, the backed up data is first copied to a temporary location and then copied to the Exchange server Storage Group directory. It is recommended to dismount all the databases within the Storage Group and backup and remove all existing files from the Storage Group directory. See Microsoft Exchange Disaster Recovery Operations Guide - KB867704.

Note The current account must have privileges to access the Exchange server. See KB867704 and KB824126

See the following sections:

- “Restoring to Application” on page 44
- “Restoring to Disk” on page 46
- “Restoring Deleted Storage Groups” on page 50

Restoring to Application

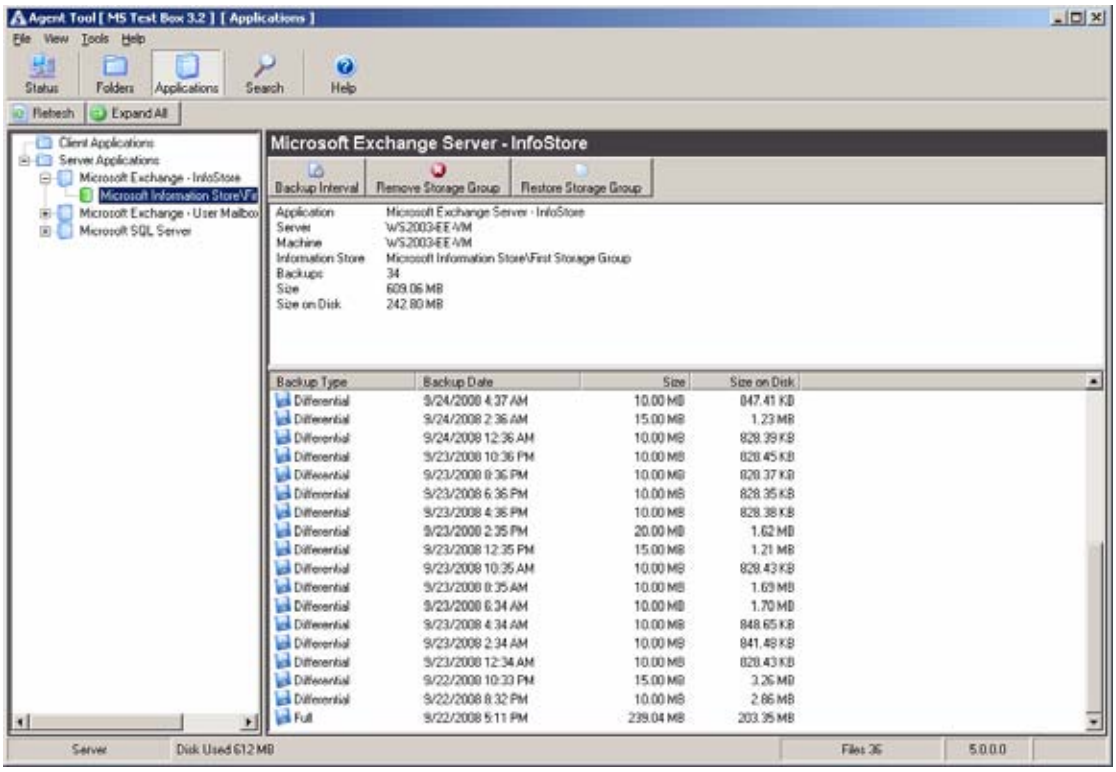
To restore a Storage Group using Restore to Application, perform the following steps:

Note Exchange 2007 users need to dismount the database before the restore, and mount it after the restore.

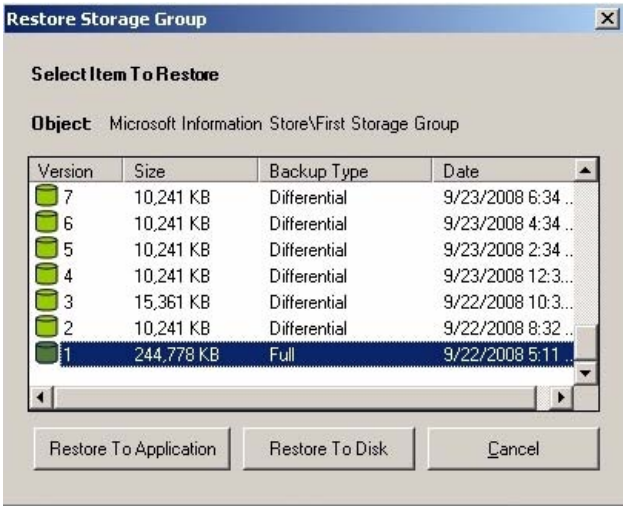
Step 1 In the SonicWALL CDP Agent Tool, click the **Applications** tab.

Step 2 In the left pane under **Microsoft Exchange - InfoStore**, select the group that you want to restore.

Step 3 In the right pane, click the **Restore Storage Group** button.


Agent Tool [MS Test Box 3.2] [Applications]
File View Tools Help
Status
Folders
Applications
Search
Help
Refresh
Expand All
Client Applications
Server Applications
Microsoft Exchange - InfoStore
Microsoft Information Store\First Storage Group
Microsoft Exchange - User Mailbox
Microsoft SQL Server
Microsoft Exchange Server - InfoStore
Backup Interval
Remove Storage Group
Restore Storage Group
Application Microsoft Exchange Server - InfoStore
Server WS2003-EE-VM
Machine WS2003-EE-VM
Information Store Microsoft Information Store\First Storage Group
Backups 34
Size 609.06 MB
Size on Disk 242.80 MB
Backup Type
Backup Date
Size
Size on Disk
Differential 9/24/2008 4:37 AM 10.00 MB 847.41 KB
Differential 9/24/2008 2:36 AM 15.00 MB 1.23 MB
Differential 9/24/2008 12:36 AM 10.00 MB 828.39 KB
Differential 9/23/2008 10:36 PM 10.00 MB 828.45 KB
Differential 9/23/2008 8:36 PM 10.00 MB 828.37 KB
Differential 9/23/2008 6:36 PM 10.00 MB 828.35 KB
Differential 9/23/2008 4:36 PM 10.00 MB 828.38 KB
Differential 9/23/2008 2:35 PM 20.00 MB 1.62 MB
Differential 9/23/2008 12:35 PM 15.00 MB 1.21 MB
Differential 9/23/2008 10:35 AM 10.00 MB 828.43 KB
Differential 9/23/2008 8:35 AM 10.00 MB 1.69 MB
Differential 9/23/2008 6:34 AM 10.00 MB 1.70 MB
Differential 9/23/2008 4:34 AM 10.00 MB 848.65 KB
Differential 9/23/2008 2:34 AM 10.00 MB 841.48 KB
Differential 9/23/2008 12:34 AM 10.00 MB 828.43 KB
Differential 9/22/2008 10:33 PM 15.00 MB 3.26 MB
Differential 9/22/2008 8:32 PM 10.00 MB 2.86 MB
Full 9/22/2008 5:11 PM 239.04 MB 203.35 MB
Server
Disk Used 612 MB
Files 36
5.0.0.0

Step 4 In the **Restore Storage Group** dialog box, select the backup that you want to restore.


Restore Storage Group
Select Item To Restore
Object Microsoft Information Store\First Storage Group
Version Size Backup Type Date
7 10,241 KB Differential 9/23/2008 6:34 ..
6 10,241 KB Differential 9/23/2008 4:34 ..
5 10,241 KB Differential 9/23/2008 2:34 ..
4 10,241 KB Differential 9/23/2008 12:3...
3 15,361 KB Differential 9/22/2008 10:3...
2 10,241 KB Differential 9/22/2008 8:32 ..
1 244,778 KB Full 9/22/2008 5:11 ..
Restore To Application
Restore To Disk
Cancel

Step 5 Click **Restore To Application**.

The **Browse For Folder** dialog box appears.

Step 6 In the **Browse For Folder** dialog box, do one of the following to select a temporary location:

- Select an existing folder to store the temporary copy of the InfoStore data
- Click **Make New Folder** to create a new folder for the temporary data

Step 7 Click **OK**.

The application displays a progress bar as the backed up data is copied to the temporary folder and then to the Exchange Server folder. When the restore process is complete, the progress bar dialog box closes and the **Restore Completed** dialog box is displayed.

Step 8 Click **OK** in the **Restore Completed** dialog box.

Restoring to Disk

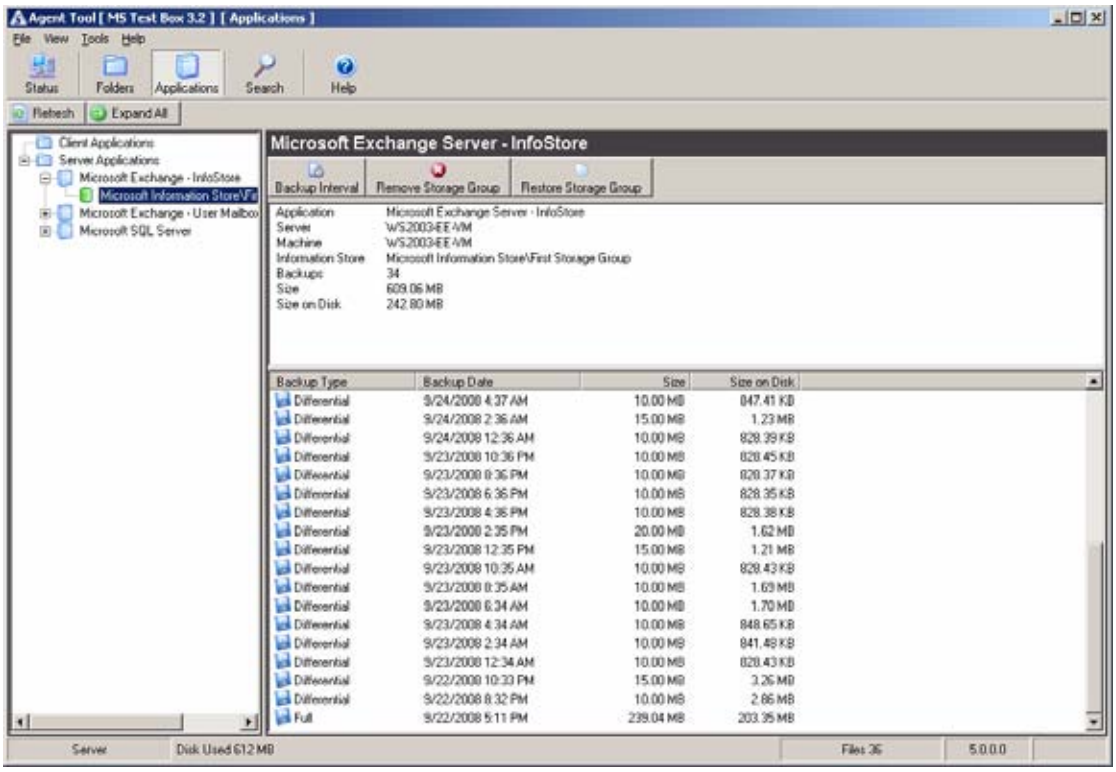
To restore a Storage Group using Restore to Disk, perform the following steps:

Note Exchange 2007 users need to dismount the database before the restore, and mount it after the restore.

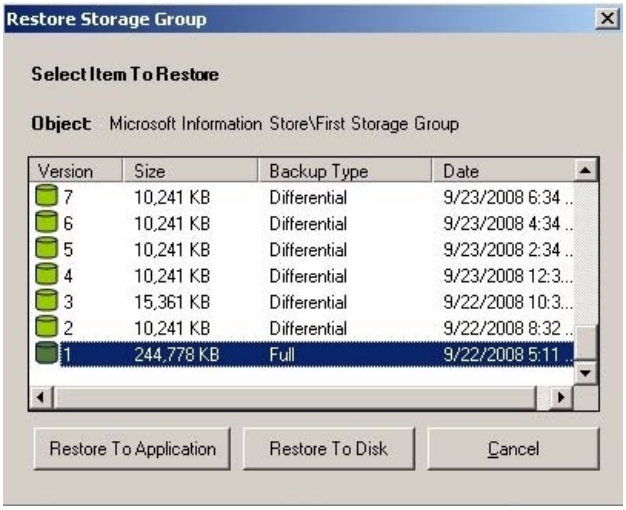
Step 1 In the SonicWALL CDP Agent Tool, click the **Applications** tab.

Step 2 In the left pane under **Microsoft Exchange - InfoStore**, select the group that you want to restore.

Step 3 In the right pane, click the **Restore Storage Group** button.


Agent Tool [MS Test Box 3.2] [Applications]
File View Tools Help
Status
Folders
Applications
Search
Help
Refresh
Expand All
Client Applications
Server Applications
Microsoft Exchange - InfoStore
Microsoft Information Store\First
Microsoft Exchange - User Mailbox
Microsoft SQL Server
Microsoft Exchange Server - InfoStore
Backup Interval
Remove Storage Group
Restore Storage Group
Application Microsoft Exchange Server - InfoStore
Server WS2003-EE-VM
Machine WS2003-EE-VM
Information Store Microsoft Information Store\First Storage Group
Backups 34
Size 609.06 MB
Size on Disk 242.80 MB
Backup Type
Backup Date
Size
Size on Disk
Differential 9/24/2008 4:37 AM 10.00 MB 847.41 KB
Differential 9/24/2008 2:36 AM 15.00 MB 1.23 MB
Differential 9/24/2008 12:36 AM 10.00 MB 828.39 KB
Differential 9/23/2008 10:36 PM 10.00 MB 828.45 KB
Differential 9/23/2008 8:36 PM 10.00 MB 828.37 KB
Differential 9/23/2008 6:36 PM 10.00 MB 828.35 KB
Differential 9/23/2008 4:36 PM 10.00 MB 828.38 KB
Differential 9/23/2008 2:35 PM 20.00 MB 1.62 MB
Differential 9/23/2008 12:35 PM 15.00 MB 1.21 MB
Differential 9/23/2008 10:35 AM 10.00 MB 828.43 KB
Differential 9/23/2008 8:35 AM 10.00 MB 1.69 MB
Differential 9/23/2008 6:34 AM 10.00 MB 1.70 MB
Differential 9/23/2008 4:34 AM 10.00 MB 848.65 KB
Differential 9/23/2008 2:34 AM 10.00 MB 841.48 KB
Differential 9/23/2008 12:34 AM 10.00 MB 828.43 KB
Differential 9/22/2008 10:33 PM 15.00 MB 3.26 MB
Differential 9/22/2008 8:32 PM 10.00 MB 2.86 MB
Full 9/22/2008 5:11 PM 239.04 MB 203.35 MB
Server
Disk Used 612 MB
Files 36
5.0.0.0

Step 4 In the **Restore Storage Group** dialog box, select the backup that you want to restore.

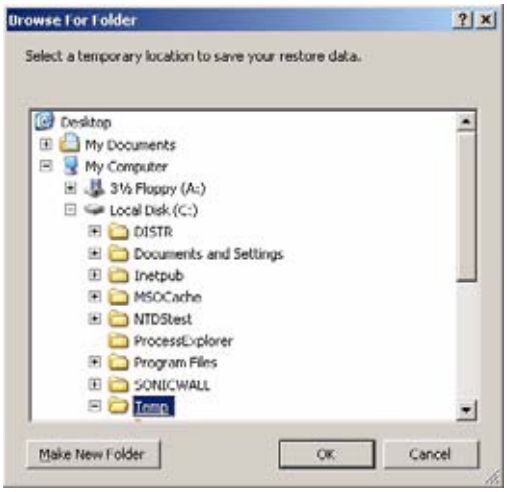

Restore Storage Group
Select Item To Restore
Object Microsoft Information Store\First Storage Group
Version Size Backup Type Date
7 10,241 KB Differential 9/23/2008 6:34 ..
6 10,241 KB Differential 9/23/2008 4:34 ..
5 10,241 KB Differential 9/23/2008 2:34 ..
4 10,241 KB Differential 9/23/2008 12:3...
3 15,361 KB Differential 9/22/2008 10:3...
2 10,241 KB Differential 9/22/2008 8:32 ..
1 244,778 KB Full 9/22/2008 5:11 ..
Restore To Application
Restore To Disk
Cancel

Step 5 Click **Restore To Disk**.

The **Browse For Folder** dialog box appears.

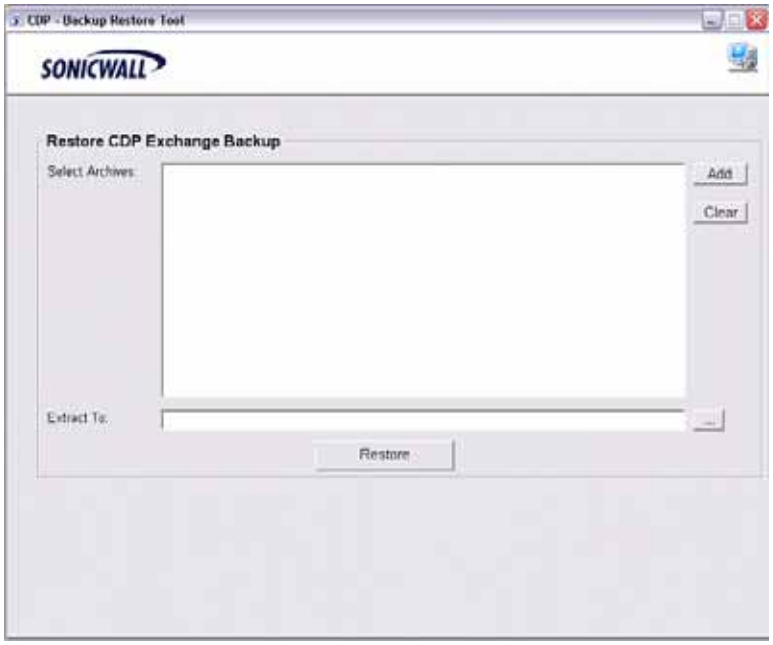
Step 6 In the **Browse For Folder** dialog box, do one of the following to select a location on your local system:

- Select an existing folder to store the copy of the InfoStore data
- Click **Make New Folder** to create a new folder for the data



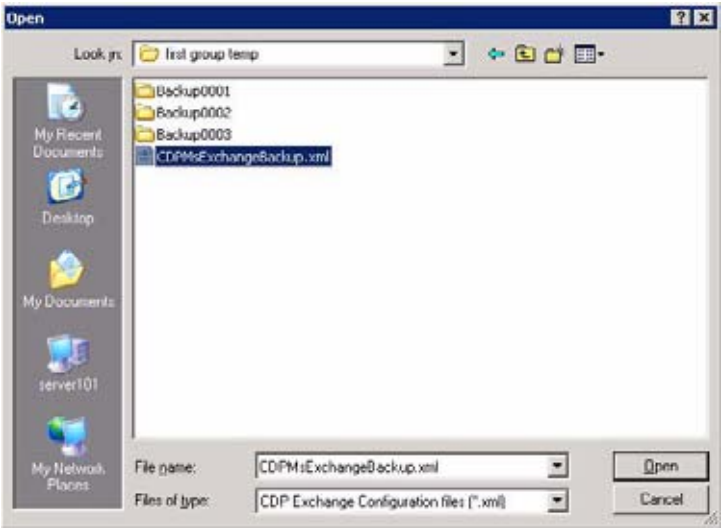
Step 7 Click **OK**.

Step 8 Launch the CDP Backup and Restore Tool by double-clicking **MsExchangeRestore.exe** in the SonicWALL CDP installation folder. You can also launch the tool from the Windows Start menu.

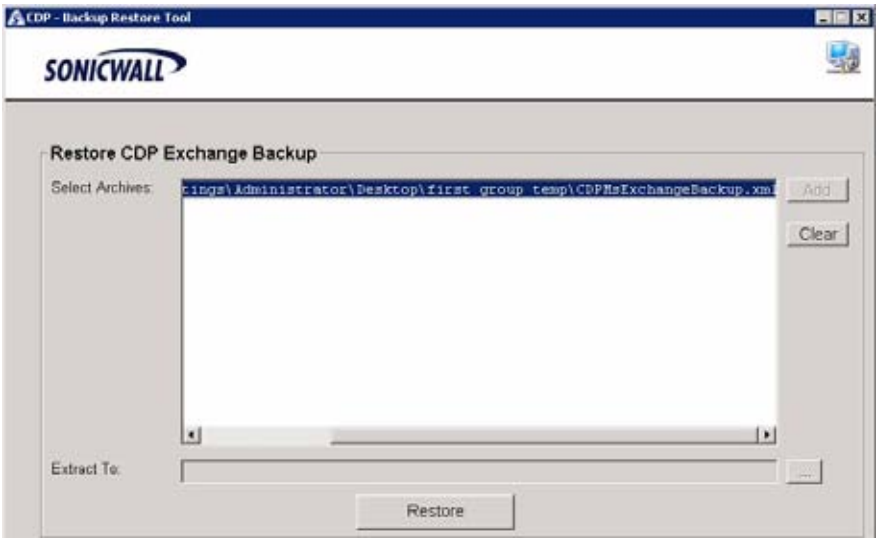


Step 9 Click the **Add** button. The Open dialog box appears.

Step 10 In the Open dialog box, browse to the local folder where the backup is located, select the XML file **CDPMsExchangeBackup.xml**, and click **Open**.



Step 11 In the CDP Backup and Restore Tool main window, click the entry in the **Select Archive** field to select it, and then click **Restore**.



Step 12 Wait for the restore process to finish. When finished, a dialog box will indicate the status. Click **OK**.

Restoring Deleted Storage Groups

Once a storage group is deleted from Exchange, there is no container to hold the contents, even though SonicWALL CDP has a copy of the storage group backup. This container (an empty storage group) must be created prior to restoring the storage group.

For both Exchange 2003 and 2007, the recommended way to recover deleted storage groups is to restore Active Directory first and then restore the InfoStore storage group and the user mailboxes. This is because Exchange relies on the Active Directory directory service for its directory operations. Active Directory provides all mailbox information, address list services, and other recipient-related information. Active Directory also stores most Exchange configuration information.

Restoring a Deleted Storage Group, Recommended Method

The recommended method to recover deleted storage groups is to restore Active Directory first and then restore the storage group. This is recommended for both Exchange 2003 and 2007.

Step 1 Use SonicWALL CDP to restore Active Directory to a version containing the storage group.

See the "Active Directory Backup and Restore" section in the *SonicWALL CDP 5.1 Agent Tool User's Guide*, available at:

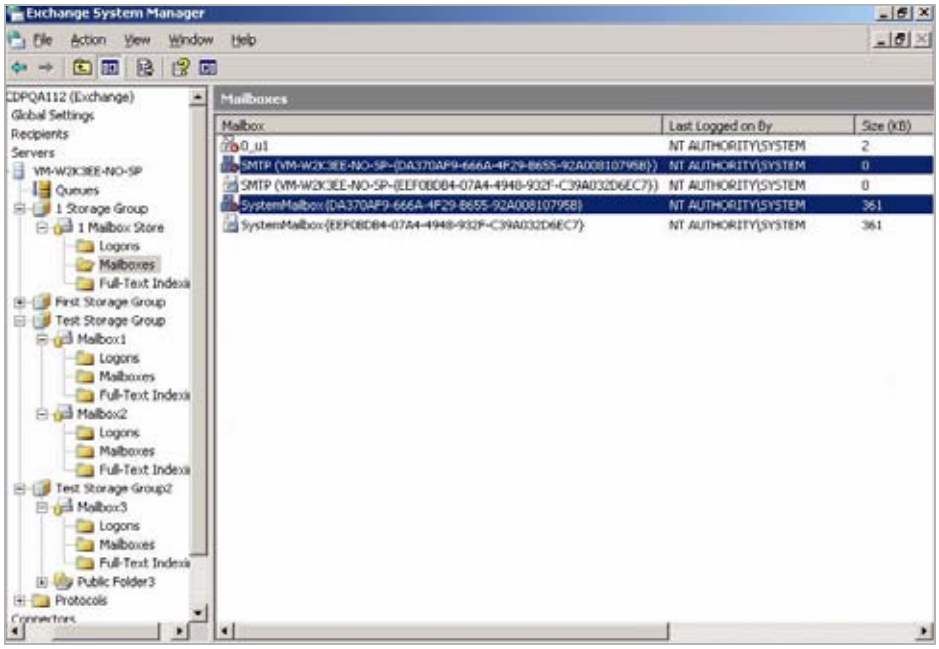
http://www.sonicwall.com/us/Support.html

Step 2 Follow the normal steps to restore the storage group with SonicWALL CDP, by using **Restore to Application**. See "Restoring to Application" on page 44.

Restoring a Deleted Storage Group in Exchange 2003, Alternate Method

This method does not involve restoring Active Directory first, and is available as an alternate method for Exchange 2003, but not for Exchange 2007. In Exchange 2007, when you delete a user mailbox from the Exchange Management Console, the user is also deleted from Active Directory.

If you restore a deleted storage group with this method, there will be two instances of **SMTP** and **SystemMailbox** under <Storage Group>/<Mailbox Store>/Mailboxes after the restore.



One instance of **SMTP** and **SystemMailbox** is created when you re-create the Mailbox store. This pair has a new ID number. The other instance is from the SonicWALL CDP restore of the storage group. This pair has the original ID number.

Despite the duplicate mailbox pair, there are no problems when sending or receiving emails or when backing up or restoring the original (restored) storage group.

Step 1 Log in as administrator to the Exchange server.

Step 2 Select one backup revision of your deleted storage group, then choose **Restore to Disk**.

Step 3 Browse to the restored folder **Backup0001**, find the ***.edb** files.

Step 4 Create a new storage group with the same name as the one backed up in SonicWALL CDP.

Step 5 Create a new mailbox database for each **.edb** file.

For example, if there are two .edb files:

- Mailbox Database1.edb
- Mailbox Database2.edb

Then create two new mailbox databases using these same names ("Mailbox Database1.edb" and "Mailbox Database2.edb") under the newly created storage group.

Step 6 Follow the normal steps to restore an InfoStore storage group by using **Restore to Application** or MSExchangeRestore.exe. See "Restoring to Application" on page 44.

Step 7 After the storage group is restored, open the Exchange system manager and **Reconnect** the user mailboxes.

Removing Storage Group from the Backup Schedule

This section describes how to remove a storage group from the list of groups scheduled for backup.

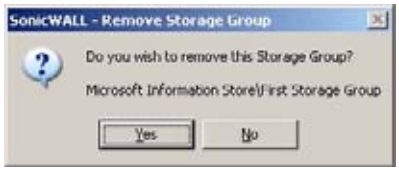
Note Removing a storage group also removes all existing backups of that storage group.

Step 1 In the SonicWALL CDP Agent Tool, click the **Applications** tab.

Step 2 In the left pane under **Microsoft Exchange - InfoStore**, select the storage group that you want to remove from the backup schedule.

Step 3 In the right pane, click the **Remove Storage Group** button.

Step 4 Click **Yes** in the confirmation dialog box.


SonicWALL - Remove Storage Group
Do you wish to remove this Storage Group?
Microsoft Information Store\First Storage Group
Yes
No

Removing the InfoStore Application

This section describes how to remove the InfoStore application from the SonicWALL CDP Agent Tool.

Note Removing the InfoStore application also removes all existing storage group backups.

Step 1 In the SonicWALL CDP Agent Tool, click the **Applications** tab.

Step 2 In the left pane, select **Microsoft Exchange - Info Store**.

Step 3 In the right pane, click the **Remove Application** button.

Step 4 Click **Yes** in the confirmation dialog box.

Verifying InfoStore Backup Activity

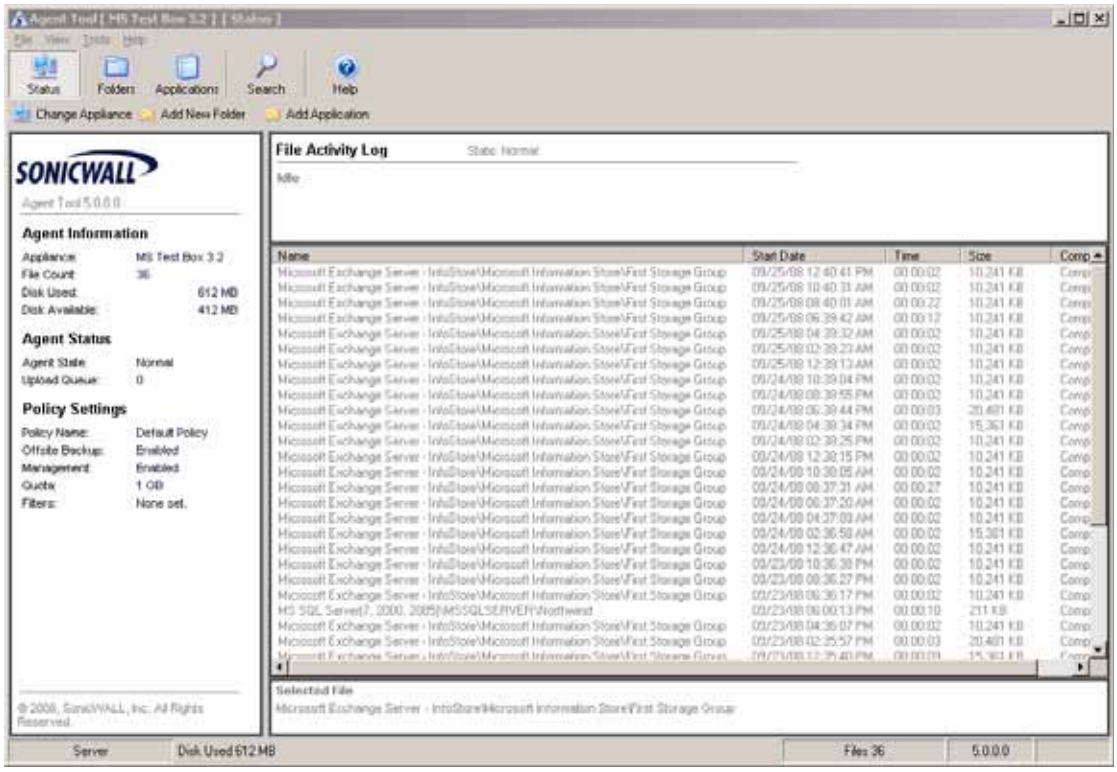
This section describes how to tell if your Microsoft Exchange backups are working correctly. You can view log entries showing the backups in the **Status** page of the SonicWALL CDP Agent Tool.

You should see log entries showing backups right after adding one or more storage groups to the backup schedule, and then after each scheduled backup.

Step 1 In the SonicWALL CDP Agent Tool, click the **Status** tab at the top of the window.

Step 2 View the log entries in the bottom right pane.

Each related entry contains the application name in the **Name** column.



Manually Obtaining EsEbcli2.dll For 64-bit Machine

The SonicWALL CDP MS Exchange InfoStore Backup and Restore feature uses the Exchange Backup and Restore API. The API is implemented by the Dynamically Linked Library (DLL) file: EsEbcli2.dll. This DLL is installed by default on all 32-bit installations. On 64-bit installation, you must obtain EsEbcli2.dll manually.

EsEbcli2.dll can be obtained from the following sources:

- Microsoft Exchange Server 2007 Installation CD
- Microsoft Download Center

Note Version 8.1.240.3 of EsEbcli2.dll is required by SonicWALL CDP.

Obtaining EsEbcli2.dll from the Microsoft Exchange Server 2007 Installation CD

This section describes how to manually obtain the EsEbcli2.dll from your Microsoft Exchange Server 2007 Installation CD.

Step 1 Navigate to setup\i386\exchange\bin folder of the Exchange 2007 installation CD

Step 2 Locate version 8.1.240.3 of the EsEbcli2.dll file, right-click it and select **Copy** from the pop up menu.

Step 3 Navigate to C:\Program Files(x86)\SonicWALL\SonicWALL Continuous Data Protection\ folder on your machine.

Step 4 Right-click inside the folder and select **Paste** from the pop up menu.

Step 5 Restart the CDP Agent Tool and the SonicWALL CDP Agent Service.

The Microsoft Exchange Server - InfoStore application should function properly.

Obtaining EsEbcli2.dll from the Microsoft Download Center

This section describes how to manually obtain the EsEbcli2.dll from the Microsoft Exchange Server 2007 Service Pack 1, available at the Microsoft Download Center.

Step 1 Navigate to Microsoft Download Center at <http://www.microsoft.com/downloads>.

Step 2 Type in “E2K7SP1EN32.exe” in the search window and select **Go**.

Step 3 List of results will appear. Select the **Exchange Server 2007 Service Pack 1** page.

Step 4 Scroll down to the bottom of the page and select the **Download** button next to E2K7SP1EN32.exe file. Make sure to download the 32-bit version, the 64-bit version does not include the missing DLL file.

Step 5 Extract the E2K7SP1EN32.exe file, making sure to note down the extraction folder.

Step 6 Navigate to the extraction folder from step 3 and to the following path <setup\serverroles\common\path> inside the folder.

Step 7 Locate version 8.1.240.3 of the EsEbcli2.dll file, right-click it and select **Copy** from the pop up menu.

Step 8 Navigate to C:\Program Files(x86)\SonicWALL\SonicWALL Continuous Data Protection\ folder.

Step 9 Right-click inside the folder and select **Paste** from the pop up menu.

Step 10 Restart the CDP Agent Tool and the SonicWALL CDP Agent Service.

The Microsoft Exchange Server - InfoStore application should function properly.

Active Directory Backup and Restore

This section provides brief instructions for backing up and restoring Active Directory. For more information, see the *SonicWALL CDP Administrator's Guide*.

Backing Up Active Directory

To add Active Directory for backup using the Agent Tool, perform the following steps:

Step 1 Open the **SonicWALL Agent Tool** on the Domain Controller.

Step 2 Go to **Applications** and add **Active Directory**.

The following options are available to edit for Active Directory using the Agent Tool:

- Configure Backup Interval - (Default or custom).
- Backup Offsite - Send data to the Offsite Service.
- Remove Server Application - Stop backing up Active Directory.

Restarting the Domain Controller in Safe Mode

You cannot restore Active Directory in normal Windows mode. This is because the service is already active. Before restoring Active Directory on Windows Server 2003 or 2000, you must boot your computer into safe mode. Once in safe mode, you can restore the Active Directory as an application. This is because in safe mode the Active Directory is disabled.

Note Restore Active Directory on a Microsoft Windows 2008 Server does not need to boot from Safe Mode.

To boot your computer into safe mode, perform the following steps:

Step 1 Boot your computer and press **F5** or **F8** after POST/BIOS and before the Windows splash-screen, depending on hardware specs of the server.

Step 2 Select the **Directory Services Recovery Mode (DSRM)**.

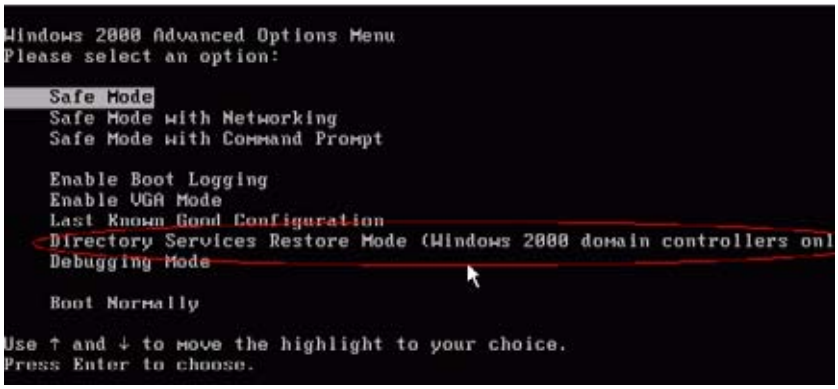
Restoring Active Directory

This procedure applies to a single-server Active Directory and is intended for disaster recovery. Restoring Active Directory will cause the loss of any changes to AD since the date of the backup that is being restored.

SonicWALL recommends the use of redundant Active Directory domain controllers. In the case of mirrored Active Directory domain controllers, you can optionally restore a small part of the database rather than the entire database (for example, because some people were deleted by mistake by the administrator or a script/program), keeping the remainder of the database up to date. In this case, the administrator selects the old data that needs to be pushed on top of the latest data during replication, after the server is rebooted out of Recovery Mode.

To restore Active Directory using the Agent Tool, perform the following steps:

Step 1 Restart the Domain Controller in Directory Services Restore Mode.


Windows 2000 Advanced Options Menu
Please select an option:
Safe Mode
Safe Mode with Networking
Safe Mode with Command Prompt
Enable Boot Logging
Enable VGA Mode
Last Known Good Configuration
Directory Services Restore Mode (Windows 2000 domain controllers onl
Debugging Mode
Boot Normally
Use ↑ and ↓ to move the highlight to your choice.
Press Enter to choose.

Step 2 Login as Restore Mode Administrator.

Step 3 Open the **SonicWALL Agent Tool**.

Step 4 Click **Applications** in the Agent Tool toolbar.

Step 5 In the left -hand navigation toolbar, expand the **Server Applications** tree.

Step 6 Highlight **Microsoft Active Directory**.

Step 7 In the right -hand portion of the window, highlight one of the backup versions and click **Restore Active Directory**.

Note The option to restore Active Directory content using the **Restore Active Directory** button is only available if there is data to restore. If there is no data to restore, the **Restore Active Directory** button will not be displayed.

Step 8 In the window that displays, select the version you would like to restore.

Step 9 Click **Restore to Application**.

Step 10 Select a folder to temporarily store the recovered data and click **OK**.

Step 11 After restoration is complete, restart the Domain Controller in normal mode to complete Active Directory restoration.

SQL Backup and Restore

This section provides brief instructions for backing up and restoring a Microsoft SQL server. For more information, see the *SonicWALL CDP Administrator's Guide*.

Backup Up SQL

To add Microsoft SQL for backup using the Agent Tool, perform the following steps:

Step 1 Open the **SonicWALL Agent Tool** on the SQL server

Step 2 Go to **Applications** and add **Microsoft SQL**.

The following options are available to edit for SQL using the Agent Tool:

- Backup Interval - Default or custom.
- Remove SQL Server Instance - Stop backing up a SQL Server instance.
- Restore Database - Restore a backed up database version.
- Remove Database - Stop backing up the database.

Restoring SQL

Recovery of data from Microsoft SQL using SonicWALL CDP allows users to retrieve Microsoft SQL revisions from an agent machine previously configured to backup that data. Microsoft SQL recovery can be made directly to the SQL database.

Restoring the database can be done in two ways. The database can be either restored to disk or to application. When restoring the database to disk, the database is downloaded as a set of files from the CDP Appliance. Restoring to application, on the other hand, applies the database directly to the same SQL server.

Note Microsoft SQL data can be restored using the Enterprise Manager and the Agent Tool. SQL restore using the Enterprise manager can restore to disk any SQL database, even for servers on different agents than the Enterprise Manager. See the *SonicWALL CDP Administrator's Guide*.

If an SQL database system fails, the first step is to recover all databases and transaction log files from the server. These databases contain the latest information, up to the point of failure. Next, the SQL system should be brought up on the same server or a different server. Having spare hardware will speed up database recovery.

Each recovered database should be run through a data consistency check (using "DBCC CHECKDB") because it is possible that these are corrupted databases and may have been the reason for failure. If the databases are corrupted, these could either be fixed, which normally includes data loss, or the latest backed up database (from CDP) could be used instead. If the backed up databases consist of a full, a differential, and several logs, these have to be applied in order and a database consistency check should be run at each step.

See the following sections:

- "Recovering SQL" section on page 58
- "Restoring SQL to Application" section on page 58
- "Restoring SQL To Disk" section on page 59

Recovering SQL

The Agent Tool displays a useful log in the Status page showing each database being backed up. If Local Management is disabled for the Agent's policy, then the Agent Tool will not be able to perform backup and restore operations.

To restore a Microsoft SQL database using the Agent Tool, perform the following steps:

Step 1 Click **Applications** in the Agent Tool toolbar.

Step 2 In the left-hand navigation toolbar, expand the **Server Applications** tree.

Step 3 Expand the **Microsoft SQL** tree and select the database you want to restore.

Step 4 In the right-hand portion of the window, highlight one of the backup versions and click **Restore Database**.

Step 5 In the window that displays, select the version you would like to restore. You may want to use the backup type (full, differential) or date of the backup to determine which version to restore.

Step 6 Click **Restore to Application** to restore the revision directly to the application, or click **Restore to Disk** to restore the revision to disk.

Step 7 To restore to disk, select the location to restore the files and click **OK**.

Step 8 To restore to the application, select a location to restore the files temporarily and click **OK**.

Step 9 Select a SQL Server instance and click **Add**.

Restoring SQL to Application

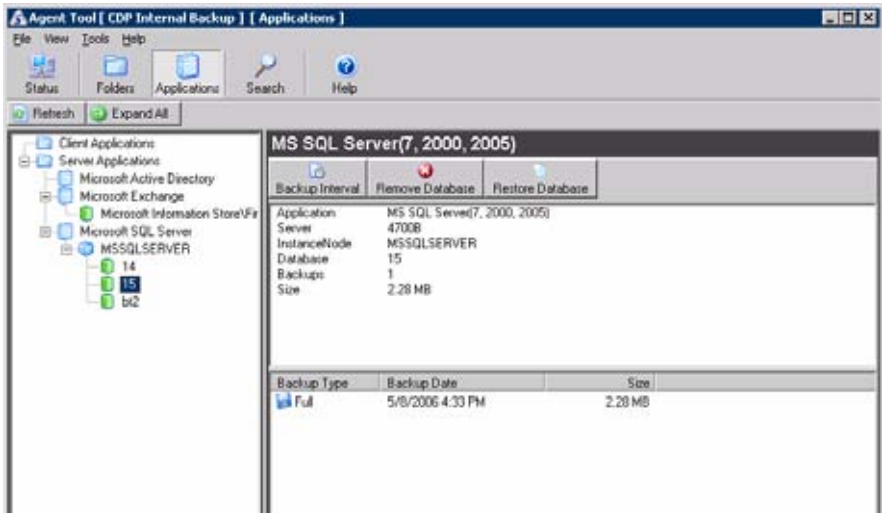
This section describes the procedure for restoring to the application using the Agent Tool.

Step 1 Ensure that the destination database (restore-to database) has the same name as database backed up. You can rename the original and create a new database with the same name, or overwrite the current database.

Step 2 Close SQL Enterprise Manager.

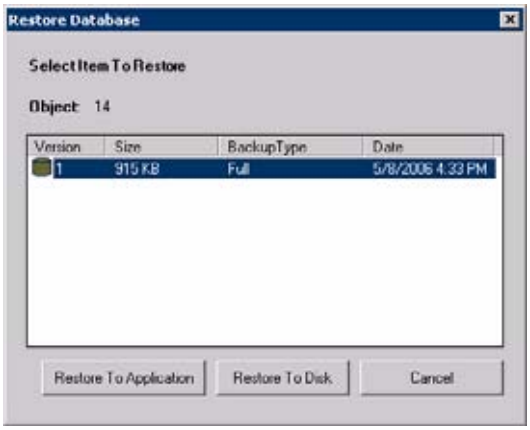
Step 3 Launch CDP Agent Tool, then go to **Applications**.

Step 4 Navigate to **Server Applications** > **Microsoft SQL Server** > **SQL Instance**, and select the database you wish to restore.



Step 5 Click **Restore Database**.

Step 6 Select the **Log**, **Differential**, or **Full** based on the date/time-stamp that you want to restore from, then click **Restore to Application**.



Step 7 Select a temporary location to download data from the CDP Appliance before importing into SQL itself (can be local or network location). Please note that this location must have sufficient free disk space to store each Log, Differential, and Full being restored. To be sure you have enough free space, roughly count each Log and Differential that exists below the version you are restoring back to the last Full (CDP will restore/replay each of these logs/differentials in order of oldest to newest automatically).

Restoring SQL To Disk

Step 1 Launch CDP Agent Tool, go to **Applications**.

Step 2 Navigate to **Server Applications** > **Microsoft SQL Server** > **SQL Instance**, select the database you want to restore.

Step 3 Click **Restore Database**.

Step 4 Select the version (date/time-stamp) to restore.

Step 5 Click **Restore to Disk** and select location on file system to restore database files.

Files will be restored using the following naming convention/syntax:

MSSQL_MSSQLSERVER_DBNAME_full.bak

MSSQL_MSSQLSERVER_DBNAME_Log1.bak

MSSQL_MSSQLSERVER_DBNAME_Log2.bak

MSSQL_MSSQLSERVER_DBNAME_Diff1.bak

MSSQL_MSSQLSERVER_DBNAME_Diff2.bak

You can then import these files into a different database, or even onto a different database server.

Installing and Using the SonicWALL CDP Linux Agent

This section describes the installation and use of the SonicWALL CDP Linux Agent. See the following sections:

- "Overview" section on page 60
- "Installing or Uninstalling the Linux Agent" section on page 61
- "Using the Menu Driven Agent Tool (cdpmenu)" section on page 64
- "Using the Command Line Interface of the Agent Tool (cdpcli)" section on page 77

Overview

The SonicWALL CDP Linux Agent runs on a Linux computer and provides commands for backing up folders from the computer to a SonicWALL CDP appliance, as well as other functions such as listing, removing, and restoring the folders and their contents.

See the following sections:

- "Linux Agent Version" section on page 60
- "Supported Linux Distributions" section on page 60
- "Linux Agent Tool User Interfaces" section on page 60
- "Linux Agent Service" section on page 61
- "Linux Agent Functionality" section on page 61

Linux Agent Version

The Linux Agent described in this document is version 5.0.0.

Supported Linux Distributions

The SonicWALL CDP Linux Agent is supported on the following Linux distributions:

- **Fedora 6, 10 (x32)**
- **RHEL 5.2 (x32)**
- **Suse 11.1 (x32)**
- **Debian 4.0 (x32)**
- **Ubuntu 9.04 (x32)**

Linux Agent Tool User Interfaces

The Linux Agent Tool presents two interfaces:

- Menu driven application (text-based) – **cdpmenu**
- Command line interface (CLI) – **cdpcli**

These interfaces are used independently of each other, but share a common configuration file, **/etc/cdp/cdpagent.conf**. The Linux Agent uses this configuration file to identify the appliance to which it backs up data.

The **cdpmenu** tool updates the configuration file with the backup appliance name when it connects. It provides the following menus:

- Connection Menu
- Appliance Menu
- Appliance Folder Menu
- Folder Menu
- File Menu

The **cdpcli** command line interface is designed to be invoked from Shell or PERL scripts and can also be used from the Linux command line prompt ($).

The **cdpcli** command line interface presents a set of stateless commands, meaning that it establishes a connection for every command. This means that the appliance IP address has to be given in every command.

Linux Agent Service

The Linux Agent service is started as a daemon (background process) at the time of system start up. It archives the files to appliance. The File System Monitoring feature will detect the file system changes in real time and the Agent Service will wait for some time (approximately 60 seconds) to start the real backup, after user adds folder for backup.

Note The backup can be forced to start from the **cdpmenu** or **cdpcli** application options.

A watch-dog tool monitors the status of the Linux Agent. If the agent service stops unexpectedly, the watch-dog restarts the agent service automatically.

Linux Agent Functionality

The following file and folder functionalities are provided by the Linux Agent:

- Add
- Delete
- List Contents
- Restore
- Trim
- Purge
- Offsite Backup
- Move/Rename
- Change Appliance

Installing or Uninstalling the Linux Agent

The Linux Agent can be installed or uninstalled only by the root user. The compressed tar file, **cdpagentinstall.tar.gz**, is used for installation.

See the following sections:

- "Installation Procedure" section on page 62
- "Uninstall Procedure" section on page 63

Installation Procedure

Perform the following steps to install the Linux Agent on your Linux computer:

Step 1 Login as root.

Step 2 Copy the compressed tar file to a location on the Linux computer.

Step 3 Unzip the file with the command:

tar –xvfz cdpagentinstall.tar.tz

It creates the **cdagentinstall** folder containing the files: **cdpagentinstall.sh** and **cdpagent.tar.gz**.

Step 4 Change directory to the **cdpagentinstall** folder.

Step 5 Run the install script with the command:

./cdpagentinstall.sh –i

It installs both the Linux Agent service and Linux Agent tools (**cdpmenu** and **cdpcli**). The installation process creates a soft link to both **cdpmenu** and **cdpcli**, allowing them to be invoked from any directory on the system. The following messages are displayed:

Installing CDP Agent BackupService...

Starting CDP Agent Daemon process.

CDP Agent BackupService is installed.

Installing CDP Agent Console...

CDP Agent Console is installed.

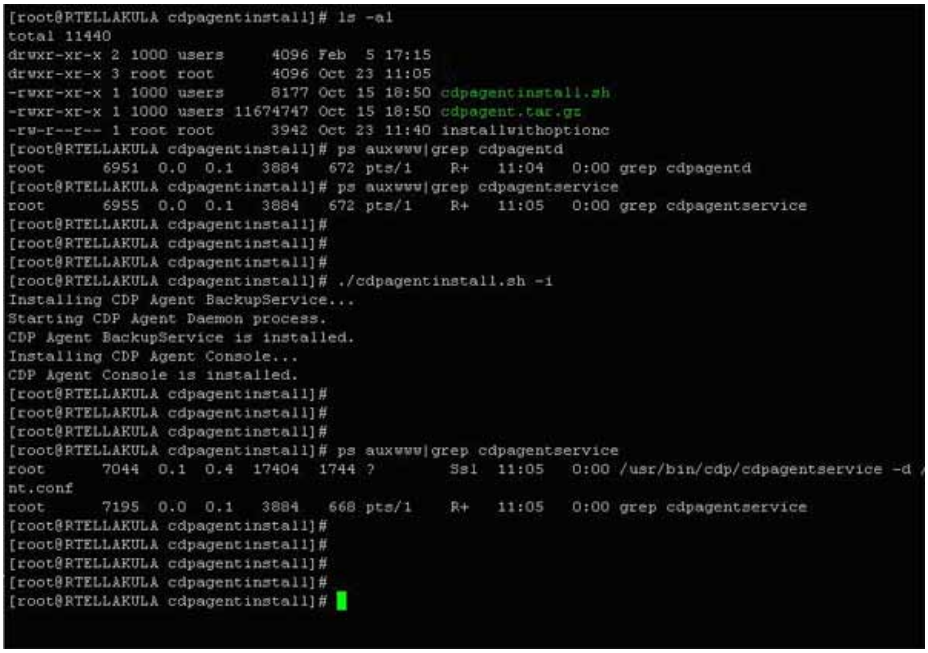
Step 6 Verify that the Linux Agent service is running with the command:

ps auxwww | grep cdpagentservice

The output should be similar to the following:

root 7044 0.1 0.4 17404 1744 ? Ssl 11:05 0:00 /usr/bin/cdp/cdpagentservice –d /usr/bin/cdp/watchdog/cdpagentservice.pid -r /etc/cdp/cdpagent.conf

root 7195 0.0 0.1 3884 668 pts/1 R+ 11:05 0:00 grep cdpagentservice


[root@RTELLAKULA cdpagentinstall]# ls -al
total 11440
drwxr-xr-x 2 1000 users 4096 Feb 5 17:15
drwxr-xr-x 3 root root 4096 Oct 23 11:05
-rwxr-xr-x 1 1000 users 8177 Oct 15 18:50 cdpagentinstall.sh
-rwxr-xr-x 1 1000 users 11674747 Oct 15 18:50 cdpagent.tar.gz
-rw-r--r-- 1 root root 3942 Oct 23 11:40 installwithoptionc
[root@RTELLAKULA cdpagentinstall]# ps auxwww|grep cdpagentd
root 6951 0.0 0.1 3884 672 pts/1 R+ 11:04 0:00 grep cdpagentd
[root@RTELLAKULA cdpagentinstall]# ps auxwww|grep cdpagentservice
root 6955 0.0 0.1 3884 672 pts/1 R+ 11:05 0:00 grep cdpagentservice
[root@RTELLAKULA cdpagentinstall]#
[root@RTELLAKULA cdpagentinstall]#
[root@RTELLAKULA cdpagentinstall]#
[root@RTELLAKULA cdpagentinstall]# ./cdpagentinstall.sh -i
Installing CDP Agent BackupService...
Starting CDP Agent Daemon process.
CDP Agent BackupService is installed.
Installing CDP Agent Console...
CDP Agent Console is installed.
[root@RTELLAKULA cdpagentinstall]#
[root@RTELLAKULA cdpagentinstall]#
[root@RTELLAKULA cdpagentinstall]#
[root@RTELLAKULA cdpagentinstall]# ps auxwww|grep cdpagentservice
root 7044 0.1 0.4 17404 1744 ? Ssl 11:05 0:00 /usr/bin/cdp/cdpagentservice -d
nt.conf
root 7195 0.0 0.1 3884 668 pts/1 R+ 11:05 0:00 grep cdpagentservice
[root@RTELLAKULA cdpagentinstall]#
[root@RTELLAKULA cdpagentinstall]#
[root@RTELLAKULA cdpagentinstall]#
[root@RTELLAKULA cdpagentinstall]#
[root@RTELLAKULA cdpagentinstall]#

Uninstall Procedure

Perform the following steps to uninstall the Linux Agent on your Linux computer:

Step 1 Login as root.

Step 2 Change directory to the **cdpagentinstall** folder.

Step 3 Run the following command to remove the Linux Agent service:

./cdpagentinstall.sh –u

Step 4 Type **y** at the **The CDP Agent daemon process is running. Do you want to stop it? [y]** prompt.

The system displays **Stopping CDP Agent Daemon process...**

Step 5 Type **y** at the **Are you sure to uninstall CDP Agent software ? [y/n]** prompt.

Step 6 Verify that the Linux Agent service is not running with the command:

ps auxwww | grep cdpagentservice

The output should be similar to the following:

root 1302 0.0 0.1 3884 672 pts/1 R+ 12:47 0:00 grep cdpagentservice

```
[root@RTELLAKULA cdpagentinstall]# ps auxwww|grep cdpagentservice
root      2221  0.2  0.8  17688  3172 ?        SLsl 10:55   0:00 /usr/bin/cdp/cdpagentservice -d /usr/
nt.conf
root      6289  0.0  0.1   3880   668 pts/1    R+   10:59   0:00 grep cdpagentservice
[root@RTELLAKULA cdpagentinstall]#
[root@RTELLAKULA cdpagentinstall]#
[root@RTELLAKULA cdpagentinstall]# ./cdpagentinstall.sh -u
The CDP Agent daemon process is running. Do you want to stop it? [y]y
Stopping CDP Agent Daemon process....
Are you sure to uninstall CDP Agent software ? [y/n]y
[root@RTELLAKULA cdpagentinstall]#
[root@RTELLAKULA cdpagentinstall]#
[root@RTELLAKULA cdpagentinstall]# ps auxwww|grep cdpagentservice
root      6937  0.0  0.1   3884   668 pts/1    R+   11:00   0:00 grep cdpagentservice
[root@RTELLAKULA cdpagentinstall]#
```

Using the Menu Driven Agent Tool (cdpmenu)

The **cdpmenu** tool is a text-based menu driven application. See the following sections for instructions on performing common tasks:

- “Adding a Folder for Backup” section on page 66
- “Listing Backed Up Folders and Folder Contents” section on page 67
- “Purging Deleted Files” section on page 70
- “Trimming Old File Revisions” section on page 71
- “Removing Files and Folders from the Appliance” section on page 72
- “Configuring Offsite Backup” section on page 74
- “Restoring a Folder to Your Computer” section on page 75
- “Verifying Restored Folders” section on page 76

Connecting to the SonicWALL CDP Appliance

The Linux Agent can connect to the appliance by performing the following steps:

Step 1 Type the command:

./cdpmenu

The following menu is displayed:

SonicWALL CDP Agent Tool [5.0.0]
Copyright 2007 Sonicwall, Inc.
Connection Menu
----
1. List available appliances
2. Manual Connection
3. Exit CDP application

Enter your choice from the above list :

Step 2 To select Manual Connection, type **2** and then press **Enter**.

The following message is displayed:

Enter the IP address to connect or press [Esc-Enter] to cancel this and go back to Connection menu :

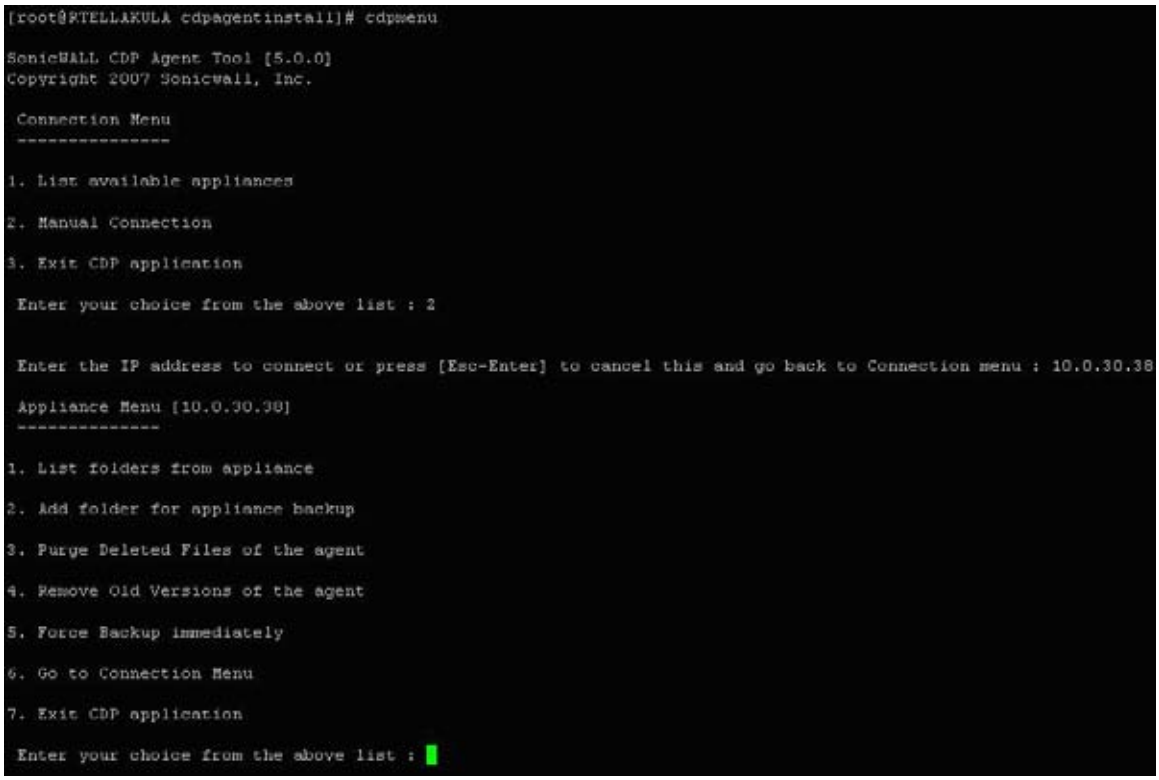
Step 3 To return to the Connection Menu, press the **Esc** key and then press **Enter**.
To connect to the appliance, type the IP address of the SonicWALL CDP appliance, such as:

10.0.30.38

The Appliance Menu is displayed, as follows:

Appliance Menu [10.0.30.38]
---
1. **List folders from appliance**
2. **Add folder for appliance backup**
3. **Purge Deleted Files of the agent**
4. **Remove Old Versions of the agent**
5. **Force Backup immediately**
6. **Go to Connection Menu**
7. **Exit CDP application**

Enter your choice from the above list :


[root@RTELLAKULA cdpagentinstall]# cdpmenu
SonicWALL CDP Agent Tool [5.0.0]
Copyright 2007 Sonicwall, Inc.
Connection Menu
1. List available appliances
2. Manual Connection
3. Exit CDP application
Enter your choice from the above list : 2
Enter the IP address to connect or press [Esc-Enter] to cancel this and go back to Connection menu : 10.0.30.38
Appliance Menu [10.0.30.38]
1. List folders from appliance
2. Add folder for appliance backup
3. Purge Deleted Files of the agent
4. Remove Old Versions of the agent
5. Force Backup immediately
6. Go to Connection Menu
7. Exit CDP application
Enter your choice from the above list :

Adding a Folder for Backup

Add a folder for backup by performing the following steps:

Step 1 Type the command:

cdpmenu

The following menu is displayed:

SonicWALL CDP Agent Tool [5.0.0]
Copyright 2007 Sonicwall, Inc.
Appliance from last connection

10.0.30.38

Do you wish to connect to it [y/n] ? :

Step 2 To connect to the appliance, type **y** and then press **Enter**.

The Appliance Menu is displayed:

Appliance Menu [10.0.30.38]
----
1. List folders from appliance
2. Add folder for appliance backup
3. Purge Deleted Files of the agent
4. Remove Old Versions of the agent
5. Force Backup immediately
6. Go to Connection Menu
7. Exit CDP application

Enter your choice from the above list :

Step 3 To add a folder for backup, type **2** and then press **Enter**.

The following is displayed:

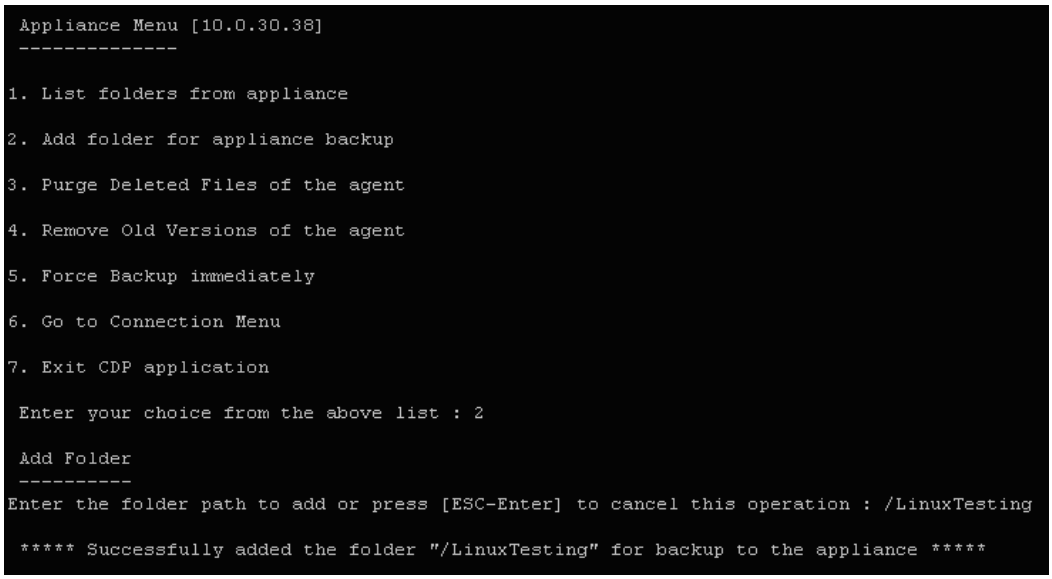
Add Folder

Enter the folder path to add or press [ESC-Enter] to cancel this operation :

Step 4 Type the folder path to be backed up, such as: **/LinuxTesting**.

The following message is displayed:

******* Successfully added the folder "/LinuxTesting" for backup to the appliance *******


Appliance Menu [10.0.30.38]
1. List folders from appliance
2. Add folder for appliance backup
3. Purge Deleted Files of the agent
4. Remove Old Versions of the agent
5. Force Backup immediately
6. Go to Connection Menu
7. Exit CDP application
Enter your choice from the above list : 2
Add Folder
Enter the folder path to add or press [ESC-Enter] to cancel this operation : /LinuxTesting
***** Successfully added the folder "/LinuxTesting" for backup to the appliance *****

The Appliance Menu is also displayed again:

Appliance Menu [10.0.30.38]
----
1. **List folders from appliance**
2. **Add folder for appliance backup**
3. **Purge Deleted Files of the agent**
4. **Remove Old Versions of the agent**
5. **Force Backup immediately**
6. **Go to Connection Menu**
7. **Exit CDP application**

Enter your choice from the above list :

Step 5 To force an immediate backup of the folder, type **5** and then press **Enter**.

The following message is displayed:

***** The Linux Agent service has been notified to do backup immediately. It will start archiving in a minute. *****

Listing Backed Up Folders and Folder Contents

To list folders and their contents that have been backed up on the appliance, perform the following steps:

Step 1 Type the command:

cdpmenu

The following menu is displayed:

SonicWALL CDP Agent Tool [5.0.0]
Copyright 2007 Sonicwall, Inc.
Appliance from last connection

10.0.30.38

Do you wish to connect to it [y/n] ? :

Step 2 To connect to the appliance, type **y** and then press **Enter**.

The Appliance Menu is displayed:

Appliance Menu [10.0.30.38]
----

1. **List folders from appliance**
2. **Add folder for appliance backup**
3. **Purge Deleted Files of the agent**
4. **Remove Old Versions of the agent**
5. **Force Backup immediately**
6. **Go to Connection Menu**
7. **Exit CDP application**

Enter your choice from the above list :

Step 3 To list backed up folders on the SonicWALL CDP appliance, type **1** and then press **Enter**.

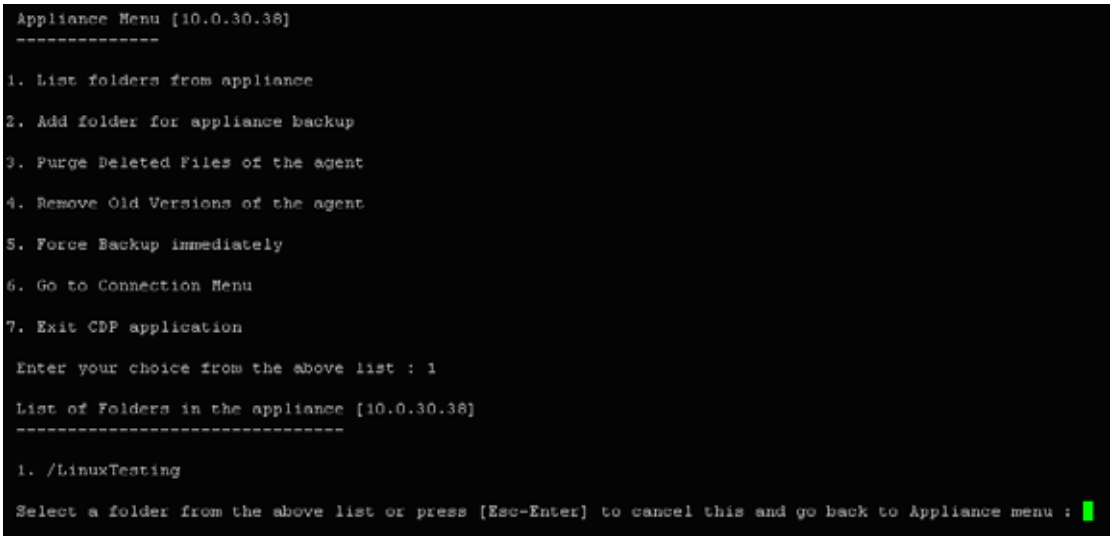
The folders on the appliance are listed with more options, as in the following example:

List of Folders in the appliance [10.0.30.38]
----

1. **/LinuxTesting**

Select a folder from the above list or press [Esc-Enter] to cancel this and go back to Appliance menu : 1

Step 4 To select the **LinuxTesting** folder, type **1** and then press **Enter**. In this example, no other folders are available on the appliance.


Appliance Menu [10.0.30.38]
1. List folders from appliance
2. Add folder for appliance backup
3. Purge Deleted Files of the agent
4. Remove Old Versions of the agent
5. Force Backup immediately
6. Go to Connection Menu
7. Exit CDP application
Enter your choice from the above list : 1
List of Folders in the appliance [10.0.30.38]
1. /LinuxTesting
Select a folder from the above list or press [Esc-Enter] to cancel this and go back to Appliance menu :

The following menu is displayed when you select a folder:

Appliance Folder Menu [10.0.30.38]

Selected folder: /LinuxTesting
Marked for Offsite backup : No
1. List folder contents
2. Restore folder to a path
3. Offsite backup settings
4. Remove old revisions of files
5. Purge deleted files
6. Remove folder from appliance backup
7. Go to list of Appliance folders
8. Go to Appliance Menu
9. Exit CDP application

Enter your choice from the above list :

Step 5 To list the contents of the **LinuxTesting** folder, type **1** and then press **Enter**. The folder contents are listed, as shown in the following example:

Folder Contents [10.0.30.38]

Selected folder : /LinuxTesting
1. CDP_TC1.pl
2. CDP_TC10.pl
3. CDP_TC11.pl
4. CDP_TC2.pl
5. CDP_TC3.pl
6. CDP_TC31.pl
7. CDP_TC4.pl
8. CDP_TC4_old.pl
9. CDP_TC5.pl
10. CDP_TC6.pl
11. CDP_TC7.pl
12. CDP_TC8.pl
13. CDP_TC9.pl
14. cdp_result.out
15. test

Select your choice from the above list or press [Esc-Enter] to leave this list :

Purging Deleted Files

Deleted files can be purged from the SonicWALL CDP appliance at the agent level from the Appliance Menu, and at the folder level from the Appliance Folder Menu.

To purge deleted files from the SonicWALL CDP appliance at the agent level, perform the following steps:

Step 1 Type the command:

cdpmenu

The following menu is displayed:

SonicWALL CDP Agent Tool [5.0.0]
Copyright 2007 Sonicwall, Inc.
Appliance from last connection

10.0.30.38

Do you wish to connect to it [y/n] ? :

Step 2 To connect to the appliance, type **y** and then press **Enter**.

The Appliance Menu is displayed:

Appliance Menu [10.0.30.38]
----
1. **List folders from appliance**
2. **Add folder for appliance backup**
3. **Purge Deleted Files of the agent**
4. **Remove Old Versions of the agent**
5. **Force Backup immediately**
6. **Go to Connection Menu**
7. **Exit CDP application**

Enter your choice from the above list :

Step 3 To purge deleted files, type **3** and then press **Enter**.

Step 4 Type **y** to confirm, as needed.

The following message is displayed:

******* Successfully purged all the deleted files from the appliance *******

Trimming Old File Revisions

Old revisions of files can be deleted from the SonicWALL CDP appliance at the agent level from the Appliance Menu, at the folder level from the Appliance Folder Menu, and at the individual level from the File Menu.

To trim old file revisions from the SonicWALL CDP appliance at the agent level, perform the following steps:

Step 1 Type the command:

cdpmenu

The following menu is displayed:

SonicWALL CDP Agent Tool [5.0.0]
Copyright 2007 Sonicwall, Inc.
Appliance from last connection

10.0.30.38

Do you wish to connect to it [y/n] ? :

Step 2 To connect to the appliance, type **y** and then press **Enter**.

The Appliance Menu is displayed:

Appliance Menu [10.0.30.38]
----
1. **List folders from appliance**
2. **Add folder for appliance backup**
3. **Purge Deleted Files of the agent**
4. **Remove Old Versions of the agent**
5. **Force Backup immediately**
6. **Go to Connection Menu**
7. **Exit CDP application**

Enter your choice from the above list :

Step 3 To trim old file revisions, type **4** and then press **Enter**.

Step 4 Type **y** to confirm, as needed.

Removing Files and Folders from the Appliance

To remove a backed up folder and its contents from the SonicWALL CDP appliance, perform the following steps:

Step 1 Display the list of backed up folders as described in "Listing Backed Up Folders and Folder Contents" on page 67.

List of Folders in the appliance [10.0.30.38]
---
1. /LinuxTesting

Select a folder from the above list or press [Esc-Enter] to cancel this and go back to Appliance menu :

Step 2 Type the number for the folder you want to remove and then press **Enter**.

The following menu is displayed when you select a folder:

Appliance Folder Menu [10.0.30.38]

Selected folder: /LinuxTesting
Marked for Offsite backup : No
1. List folder contents
2. Restore folder to a path
3. Offsite backup settings
4. Remove old revisions of files
5. Purge deleted files
6. Remove folder from appliance backup
7. Go to list of Appliance folders
8. Go to Appliance Menu
9. Exit CDP application

Enter your choice from the above list :

Step 3 Type **6** as your choice and then press **Enter**.

The following confirmation is displayed:

Are you sure you want to remove this folder from the appliance [y/n]? :

Step 4 To remove the folder and its contents, type **y** and then press **Enter**.

The following messages are displayed:

Removing the file from appliance "/LinuxTesting/CDP_TC1.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC10.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC11.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC2.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC3.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC31.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC4.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC4_old.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC5.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC6.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC7.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC8.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC9.pl"
Removing the file from appliance "/LinuxTesting/cdp_result.out"

LRemoving the file from appliance "/LinuxTesting/test"
Removing the folder from appliance "/LinuxTesting"
Removing the folder from appliance "/"

******* Successfully removed the folder "/LinuxTesting" from the appliance *******

There are no folders present in the appliance.

The following image shows the removal of a folder and its contents:

```
Appliance Folder Menu [10.0.30.38]
----------------------

Selected folder           : /LinuxTesting
Marked for Offsite backup : No

1. List folder contents

2. Restore folder to a path

3. Offsite backup settings

4. Remove old revisions of files

5. Purge deleted files

6. Remove folder from appliance backup

7. Go to list of Appliance folders

8. Go to Appliance Menu

9. Exit CDP application

Enter your choice from the above list : 6


Are you sure you want to remove this folder from the appliance [y/n]? : y


Removing the file from appliance "/LinuxTesting/CDP_TC1.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC10.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC11.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC2.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC3.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC31.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC4.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC4_old.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC5.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC6.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC7.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC8.pl"
Removing the file from appliance "/LinuxTesting/CDP_TC9.pl"
Removing the file from appliance "/LinuxTesting/cdp_result.out"
Removing the file from appliance "/LinuxTesting/test"
Removing the folder from appliance "/LinuxTesting"
Removing the folder from appliance "/"

***** Successfully removed the folder "/LinuxTesting" from the appliance *****

There are no folders present in the appliance.
```

Configuring Offsite Backup

Offsite Backup can be set at the folder level.

To configure a folder for offsite backup, perform the following steps:

Step 1 Display the list of backed up folders as described in "Listing Backed Up Folders and Folder Contents" on page 67.

List of Folders in the appliance [10.0.30.38]
---
1. /LinuxTesting

Select a folder from the above list or press [Esc-Enter] to cancel this and go back to Appliance menu :

Step 2 Type the number for the folder you want to restore and then press **Enter**.

The following menu is displayed when you select a folder:

Appliance Folder Menu [10.0.30.38]

Selected folder: /LinuxTesting
Marked for Offsite backup : No
1. List folder contents
2. Restore folder to a path
3. Offsite backup settings
4. Remove old revisions of files
5. Purge deleted files
6. Remove folder from appliance backup
7. Go to list of Appliance folders
8. Go to Appliance Menu
9. Exit CDP application

Enter your choice from the above list :

Step 3 Type **3** as your choice and then press **Enter**.

The following is displayed:

Offsite Backup Settings

Selected folder: /LinuxTesting

******* This folder is Not Marked for Offsite backup *******

If you want to add this folder for Offsite backup, press [y] else press any other key to leave this operation :

Step 4 Type **y** and then press **Enter**.

The following is displayed:

******* Successfully added the folder for Offsite Backup *******

Restoring a Folder to Your Computer

To restore a backed up folder and its contents to your computer, perform the following steps:

Step 1 Display the list of backed up folders as described in "Listing Backed Up Folders and Folder Contents" on page 67.

List of Folders in the appliance [10.0.30.38]
---
1. /LinuxTesting

Select a folder from the above list or press [Esc-Enter] to cancel this and go back to Appliance menu :

Step 2 Type the number for the folder you want to restore and then press **Enter**.

The following menu is displayed when you select a folder:

Appliance Folder Menu [10.0.30.38]

Selected folder: /LinuxTesting
Marked for Offsite backup : No
1. List folder contents
2. Restore folder to a path
3. Offsite backup settings
4. Remove old revisions of files
5. Purge deleted files
6. Remove folder from appliance backup
7. Go to list of Appliance folders
8. Go to Appliance Menu
9. Exit CDP application

Enter your choice from the above list :

Step 3 Type **2** as your choice and then press **Enter**.

The following is displayed:

Enter the target folder path to restore or press [Esc-Enter] to discard this operation :

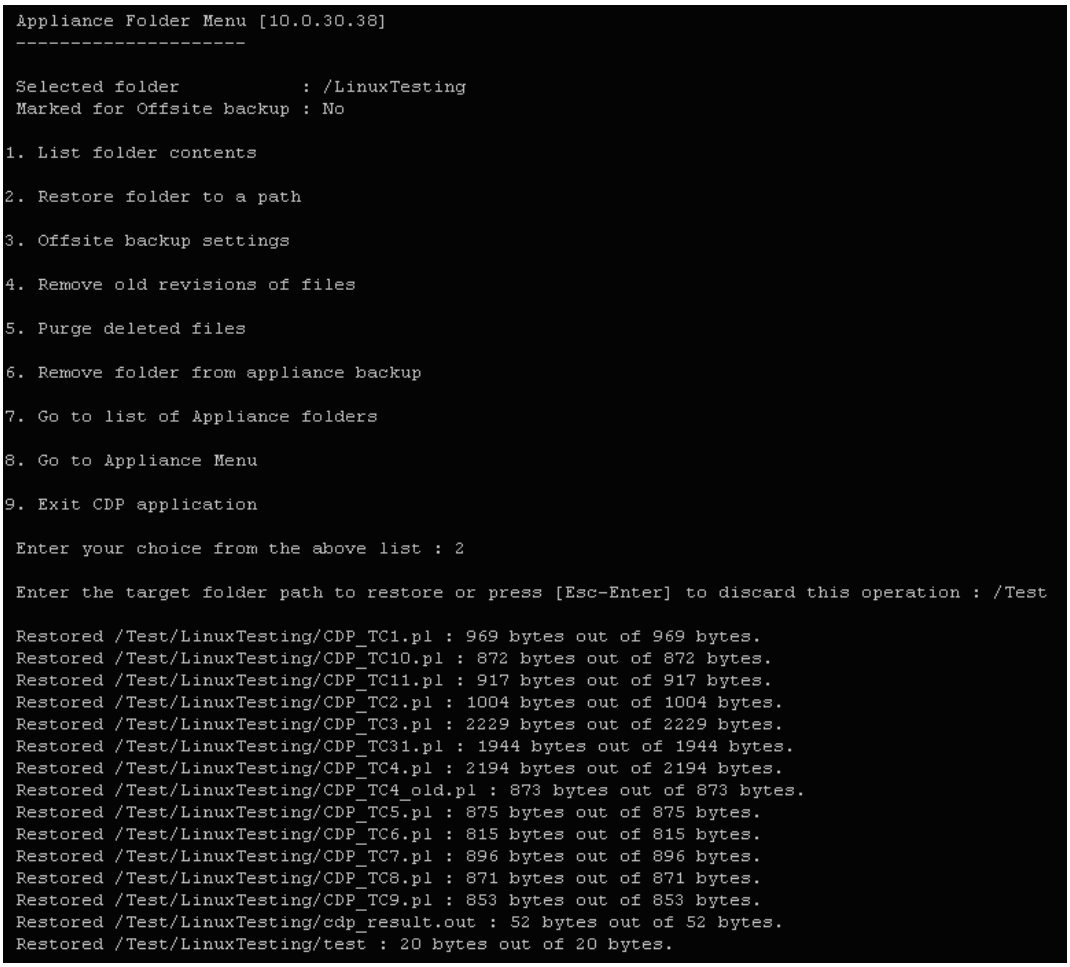
Step 4 To restore the folder and its contents, type the target location on your computer and then press **Enter**. In our example, the target destination is the folder **/Test**.

Restore messages such as the following are displayed as the folder and contents are restored to the destination:

Restored /Test/LinuxTesting/CDP_TC1.pl : 969 bytes out of 969 bytes.
Restored /Test/LinuxTesting/CDP_TC10.pl : 872 bytes out of 872 bytes.
Restored /Test/LinuxTesting/CDP_TC11.pl : 917 bytes out of 917 bytes.
Restored /Test/LinuxTesting/CDP_TC2.pl : 1004 bytes out of 1004 bytes.
Restored /Test/LinuxTesting/CDP_TC3.pl : 2229 bytes out of 2229 bytes.
Restored /Test/LinuxTesting/CDP_TC31.pl : 1944 bytes out of 1944 bytes.
Restored /Test/LinuxTesting/CDP_TC4.pl : 2194 bytes out of 2194 bytes.
Restored /Test/LinuxTesting/CDP_TC4_old.pl : 873 bytes out of 873 bytes.
Restored /Test/LinuxTesting/CDP_TC5.pl : 875 bytes out of 875 bytes.
Restored /Test/LinuxTesting/CDP_TC6.pl : 815 bytes out of 815 bytes.
Restored /Test/LinuxTesting/CDP_TC7.pl : 896 bytes out of 896 bytes.
Restored /Test/LinuxTesting/CDP_TC8.pl : 871 bytes out of 871 bytes.

Restored /Test/LinuxTesting/CDP_TC9.pl : 853 bytes out of 853 bytes.
Restored /Test/LinuxTesting/cdp_result.out : 52 bytes out of 52 bytes.
Restored /Test/LinuxTesting/test : 20 bytes out of 20 bytes.

The following image shows the restoration of a folder and its contents.


Appliance Folder Menu [10.0.30.38]
Selected folder : /LinuxTesting
Marked for Offsite backup : No
1. List folder contents
2. Restore folder to a path
3. Offsite backup settings
4. Remove old revisions of files
5. Purge deleted files
6. Remove folder from appliance backup
7. Go to list of Appliance folders
8. Go to Appliance Menu
9. Exit CDP application
Enter your choice from the above list : 2
Enter the target folder path to restore or press [Esc-Enter] to discard this operation : /Test
Restored /Test/LinuxTesting/CDP_TC1.pl : 969 bytes out of 969 bytes.
Restored /Test/LinuxTesting/CDP_TC10.pl : 872 bytes out of 872 bytes.
Restored /Test/LinuxTesting/CDP_TC11.pl : 917 bytes out of 917 bytes.
Restored /Test/LinuxTesting/CDP_TC2.pl : 1004 bytes out of 1004 bytes.
Restored /Test/LinuxTesting/CDP_TC3.pl : 2229 bytes out of 2229 bytes.
Restored /Test/LinuxTesting/CDP_TC31.pl : 1944 bytes out of 1944 bytes.
Restored /Test/LinuxTesting/CDP_TC4.pl : 2194 bytes out of 2194 bytes.
Restored /Test/LinuxTesting/CDP_TC4_old.pl : 873 bytes out of 873 bytes.
Restored /Test/LinuxTesting/CDP_TC5.pl : 875 bytes out of 875 bytes.
Restored /Test/LinuxTesting/CDP_TC6.pl : 815 bytes out of 815 bytes.
Restored /Test/LinuxTesting/CDP_TC7.pl : 896 bytes out of 896 bytes.
Restored /Test/LinuxTesting/CDP_TC8.pl : 871 bytes out of 871 bytes.
Restored /Test/LinuxTesting/CDP_TC9.pl : 853 bytes out of 853 bytes.
Restored /Test/LinuxTesting/cdp_result.out : 52 bytes out of 52 bytes.
Restored /Test/LinuxTesting/test : 20 bytes out of 20 bytes.

Verifying Restored Folders

To verify that a folder and its contents have been correctly restored on the target computer, use the **ls** command with the **a** and **l** options. For example:

[root@LINUX1 cdpagentinstall]# ls -al /Test/LinuxTesting/
total 68
drwxr-xr-x 2 root root 4096 Feb 20 11:51 .
drwxr-xr-x 3 root root 4096 Feb 20 11:51 ..
-rw-r--r-- 1 root root 52 Jan 20 14:06 cdp_result.out
-rwxr-xr-x 1 root root 872 Jan 20 14:06 CDP_TC10.pl
-rwxr-xr-x 1 root root 917 Jan 20 14:06 CDP_TC11.pl
-rwxr-xr-x 1 root root 969 Jan 20 14:06 CDP_TC1.pl
-rwxr-xr-x 1 root root 1004 Jan 20 14:06 CDP_TC2.pl
-rwxr-xr-x 1 root root 1944 Jan 20 14:06 CDP_TC31.pl
-rwxr-xr-x 1 root root 2229 Jan 20 14:06 CDP_TC3.pl

```
-rwxr-xr-x 1 root root  873 Jan 20 14:06 CDP_TC4_old.pl
-rwxr-xr-x 1 root root 2194 Jan 20 14:06 CDP_TC4.pl
-rwxr-xr-x 1 root root  875 Jan 20 14:06 CDP_TC5.pl
-rwxr-xr-x 1 root root  815 Jan 20 14:06 CDP_TC6.pl
-rwxr-xr-x 1 root root  896 Jan 20 14:06 CDP_TC7.pl
-rwxr-xr-x 1 root root  871 Jan 20 14:06 CDP_TC8.pl
-rwxr-xr-x 1 root root  853 Jan 20 14:06 CDP_TC9.pl
-rw-r--r-- 1 root root   20 Jan 20 14:06 test
```

Using the Command Line Interface of the Agent Tool (cdpcli)

The Linux Agent Tool includes a command line interface, **cdpcli**.

The commands available for use with **cdpcli** are:

- ls
- addfolder
- rmfolder
- purge
- trim
- restore
- addoffsite
- rmoffsite
- chgapp
- help

To use a command, type **cdpcli** at your Linux system prompt, followed directly by the command and its arguments. See the following sections for instructions on performing common tasks:

- “Adding a Folder for Backup” section on page 78
- “Listing Backed Up Folders in an Appliance” section on page 78
- “Listing the Contents of a Backed Up Folder” section on page 78
- “Purging Files at the Agent Level” section on page 79
- “Trimming Old Revisions of Files at the Agent Level” section on page 79
- “Removing a Backed Up Folder from the Appliance” section on page 79
- “Restoring a Folder from the Appliance to a Custom Folder on a Computer” section on page 80
- “Configuring a Folder for Offsite Backup” section on page 80
- “Connecting to a Different Appliance” section on page 80
- “Obtaining Help on the “cdpcli” Command Line Tool” section on page 80

Adding a Folder for Backup

To add a folder to be backed up in the appliance, enter the command as shown in the following example:

Step 1 At the prompt, type the command as shown, using the IP address of your SonicWALL CDP appliance followed by a colon (:), a forward slash (/), and then the folder name:

[root@LINUX1 cdpagentinstall]# cdpcli addfolder 10.0.30.38:/LinuxTesting

Step 2 View the confirmation message as shown below:

Successfully added the folder for backup.

Listing Backed Up Folders in an Appliance

To list folders that have been backed up in the appliance, enter the command as shown in the following example:

Step 1 At the prompt, type the command as shown, using the IP address of your SonicWALL CDP appliance:

[root@LINUX1 cdpagentinstall]# cdpcli ls 10.0.30.38

Step 2 View the folder listing, such as the following:

/LinuxTesting

Listing the Contents of a Backed Up Folder

To list the contents of a folder that is backed up in the appliance, enter the command as shown in the following example:

Step 1 At the prompt, type the command as shown, using the IP address of your SonicWALL CDP appliance followed by a colon (:), a forward slash (/), and then the folder name:

[root@LINUX1 cdpagentinstall]# cdpcli ls 10.0.30.38:/LinuxTesting

Step 2 View the listing, such as the following:

CDP_TC1.pl
CDP_TC10.pl
CDP_TC11.pl
CDP_TC2.pl
CDP_TC3.pl
CDP_TC31.pl
CDP_TC4.pl
CDP_TC4_old.pl
CDP_TC5.pl
CDP_TC6.pl
CDP_TC7.pl
CDP_TC8.pl
CDP_TC9.pl
cdp_result.out
test

Purging Files at the Agent Level

To purge the deleted files from a folder, enter the command as shown in the following example:

Step 1 At the prompt, type the command as shown, using the IP address of your SonicWALL CDP appliance followed by a colon (:), a forward slash (/), and then the folder name:

[root@LINUX1 cdpagentinstall]# cdpcli purge 10.0.30.38:/LinuxTesting

Step 2 View the confirmation message as shown below:

Successfully purged all the deleted files of this folder.

Trimming Old Revisions of Files at the Agent Level

To trim old revisions of files, enter the command as shown in the following example:

Step 1 At the prompt, type the command as shown, using the IP address of your SonicWALL CDP appliance followed by a colon (:), a forward slash (/), and then the folder name:

[root@LINUX1 cdpagentinstall]# cdpcli trim 10.0.30.38:/LinuxTesting

Step 2 View the list of trimmed files and the confirmation message as shown below:

Trimming the old revisions of "/LinuxTesting/CDP_TC1.pl"
Trimming the old revisions of "/LinuxTesting/CDP_TC10.pl"
Trimming the old revisions of "/LinuxTesting/CDP_TC11.pl"
Trimming the old revisions of "/LinuxTesting/CDP_TC2.pl"
Trimming the old revisions of "/LinuxTesting/CDP_TC3.pl"
Trimming the old revisions of "/LinuxTesting/CDP_TC31.pl"
Trimming the old revisions of "/LinuxTesting/CDP_TC4.pl"
Trimming the old revisions of "/LinuxTesting/CDP_TC4_old.pl"
Trimming the old revisions of "/LinuxTesting/CDP_TC5.pl"
Trimming the old revisions of "/LinuxTesting/CDP_TC6.pl"
Trimming the old revisions of "/LinuxTesting/CDP_TC7.pl"
Trimming the old revisions of "/LinuxTesting/CDP_TC8.pl"
Trimming the old revisions of "/LinuxTesting/CDP_TC9.pl"
Trimming the old revisions of "/LinuxTesting/cdp_result.out"
Trimming the old revisions of "/LinuxTesting/test"

Successfully trimmed the old revisions.

Removing a Backed Up Folder from the Appliance

To remove a folder and its contents from the appliance, enter the command as shown in the following example:

Step 1 At the prompt, type the command as shown, using the IP address of your SonicWALL CDP appliance followed by a colon (:), a forward slash (/), and then the folder name:

[root@LINUX1 cdpagentinstall]# cdpcli rmfolder 10.0.30.38:/LinuxTesting

Step 2 View the confirmation message as shown below:

Successfully removed the folder from appliance.

Restoring a Folder from the Appliance to a Custom Folder on a Computer

To restore a folder and its contents from the appliance to a custom folder on your Linux system, enter the command as shown in the following example:

Step 1 At the prompt, type the command as shown, using the IP address of your SonicWALL CDP appliance followed by a colon (:), a forward slash (/), the folder name on the appliance, and then a space and the custom folder on the Linux system:

[root@LINUX1 cdpagentinstall]# cdpcli restore 10.0.30.38:/LinuxTesting /Test

Step 2 View the confirmation message as shown below:

Successfully restored the folder.

Configuring a Folder for Offsite Backup

To configure a folder for offsite backup, enter the command as shown in the following example:

Step 1 At the prompt, type the command as shown, using the IP address of your SonicWALL CDP appliance followed by a colon (:), a forward slash (/), and then the folder name:

[root@LINUX1 cdpagentinstall]# cdpcli addoffsite 10.0.30.38:/LinuxTesting

Step 2 View the confirmation message as shown below:

Successfully added the folder for Offsite Backup.

Connecting to a Different Appliance

To connect to a different SonicWALL CDP appliance, enter the command as shown in the following example:

Step 1 At the prompt, type the command as shown, using the IP address of the target SonicWALL CDP appliance:

[root@LINUX1 cdpagentinstall]# cdpcli chgapp 10.208.108.10

Step 2 View the confirmation message as shown below:

Successfully changed the backup appliance to "10.208.108.10"

Obtaining Help on the “cdpcli” Command Line Tool

To view the usage string for the **cdpcli** tool, perform the following steps:

Step 1 At the prompt, type the command as shown:

[root@LINUX1 cdpagentinstall]# cdpcli help

Step 2 View the usage string as shown below:

Using the SonicWALL CDP Mac OS X Agent

The SonicWALL CDP Mac OS X Agent runs on a Mac computer. The agent provides commands for backing up folders from the computer to a SonicWALL CDP appliance, as well as other functions, such as listing, removing, and restoring the folders and their contents.

With the agent installation, there will be two applications acting as the user interfaces: **cdpcli** and **cdpmenu**. **Cdpcli** is the command line interface for the CDP Mac OS X Agent Tool. **Cdpmenu** is the menu driven text interface for the CDP Mac OS X Agent tool.

Supported Platforms

The CDP Mac OS X Agent Tool is supported on the following operating systems:

- Apple Mac OS X 10.5.6 Leopard
- Apple Mac OS X 10.5.7 Leopard
- Apple Mac OS X 10.6 Snow Leopard
- Apple Mac OS X Server Snow Leopard
- Apple Mac OS X Server 10.5

System Requirements

The Mac running the CDP Mac OS X Agent Tool has the following minimum system requirements:

- 1 GHz Pentium 4 processor or faster
- 512 MB RAM
- Minimum 20 MB hard disk space
- 1024 x 768 video display, High Color 16-bit

Installing the SonicWALL CDP Mac OS X Agent

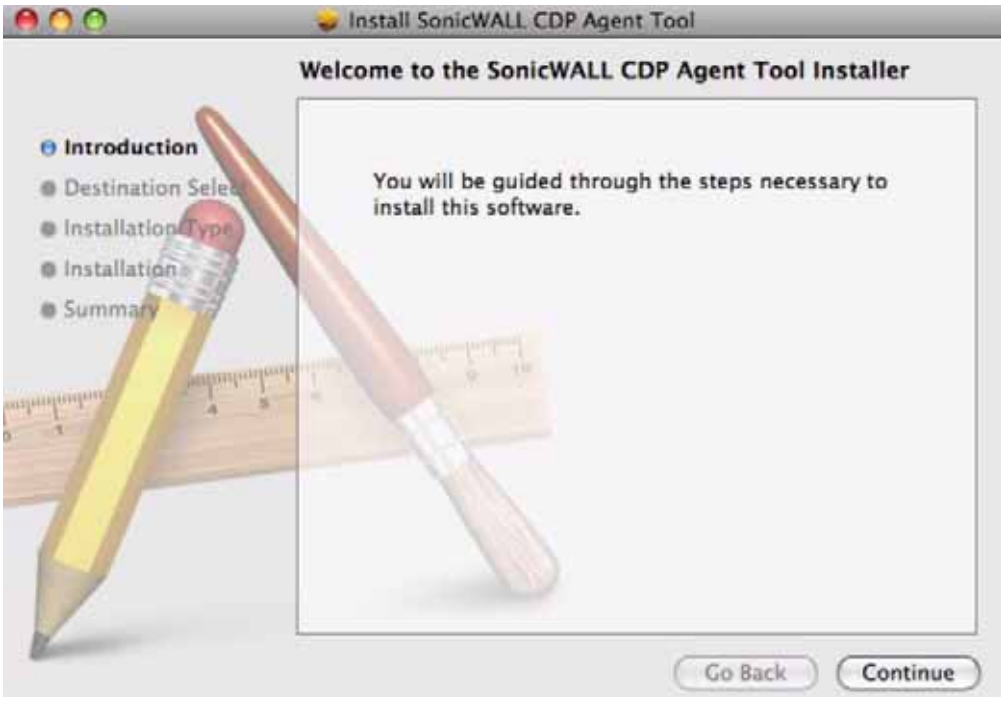
The following procedure describes the steps for installing the SonicWALL CDP Mac OS X Agent:

Step 1 Login as as a user with admin privileges.

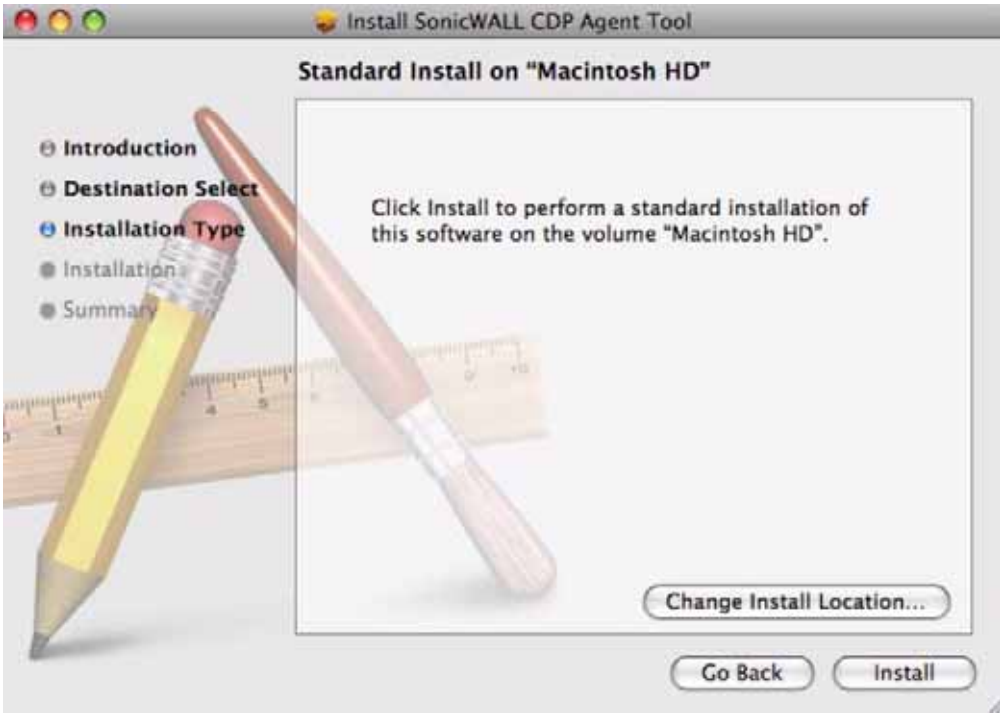
Step 2 Copy the SonicWALL **CDPMacAgent_x.x.x.x.dmg** installer to a location on the Mac computer. Invoke it from "Finder," which will create CDPMac/Agent_1.0.0.5.pkg.

Note x.x.x.x represents the installer version. The installer version in the example below is 1.0.0.5.

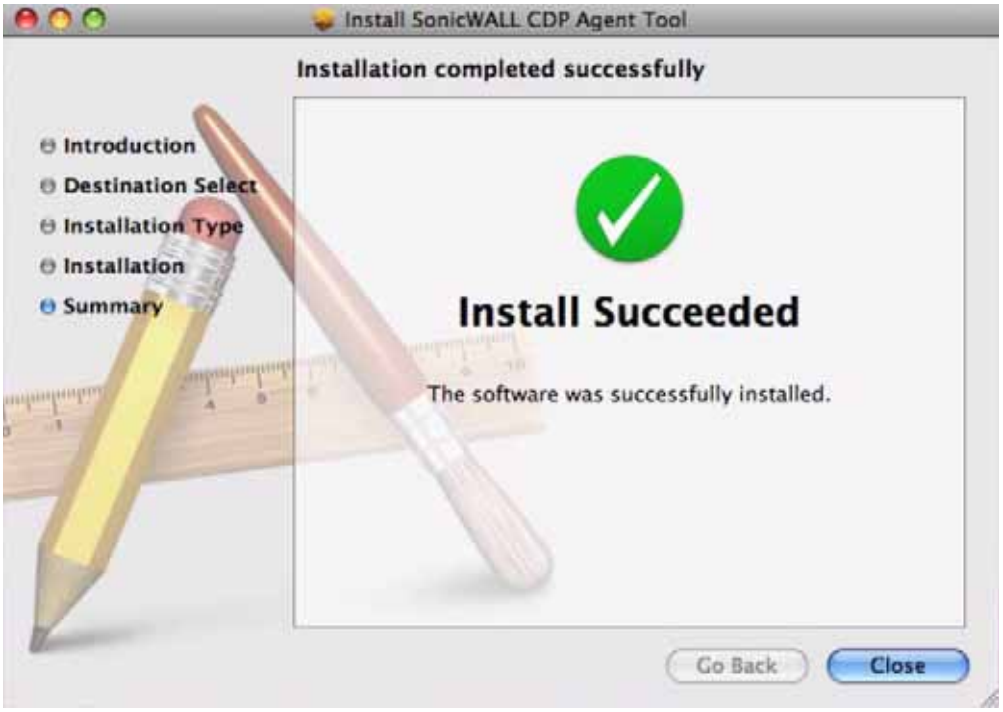
Step 3 Double click the icon to start the SonicWALL CDP Agent Tool Installer.



Step 4 Click the **Install** button to begin installation of the SonicWALL CDP Agent Tool.



Step 5 When prompted, enter the Admin password to continue the installation. The Agent Tool will notify you when the software has successfully been installed.



Both the MAC Agent service and MAC Agent tools (**cdpmenu** and **cdpcli**) are installed. The installation process creates a soft link to **cdpmenu** and **cdpcli**, allowing both to be accessible from any directory on the system.

Step 6 Verify the MAC Agent service is running with the command:

ps auxwww|grep cdpagentservice

The output should be similar to the following:

my-macbook:~cdpadmin$ ps auxwww|grep cdpagentservice

root 111 0.0 0.1 82604 2192 ?? SN 9:49AM 0:00.22 /usr/bin/cdp/cdpagentservice -d/usr/bin/cdp/watchdog/cdpagentservice.pid -r /etc/cdp/cdpagent.conf

To restart the Agent service in Mac OS X Snow Leopard, use the following command:

launchctl load /System/Library/LaunchDaemons/com.sonicwall.cdpbackupservice.plist .

Uninstall Procedure

Mac OS X does not provide solution for uninstalling applications. A script is provided that uninstalls the CDP Agent service when executed. The script is provided with the Installer.

Perform the following steps to uninstall the Mac Agent on your Mac computer:

Step 1 Login as as a user with admin privileges.

Step 2 Change directory to where the Installer is copied.

Step 3 Run the following command to remove the Mac Agent service:

./Uninstall.sh

Step 4 The script will clean up the client's file structure with all the files and folders related to the Agent service.

Step 5 Verify that the Mac Agent service is not running with the command:

ps auxwww | grep cdpagentservice

The output should be similar to the following:

root 13437 0.0 0.0 599780 416 s000 R+ 10:52AM 0:00.00 grep cdpagentservice

Using the Menu Driven Agent Tool (cdpmenu)

To use a command, type **cdpcli** at your Mac system prompt, followed directly by the command and its arguments. See the following sections for instructions on performing common tasks:

- "Connecting to the SonicWALL CDP Appliance" section on page 85
- "Adding a Folder for Backup" section on page 85
- "Listing Backed Up Folders and Folder Contents" section on page 86
- "Purging Deleted Files" section on page 87
- "Trimming Old File Revisions" section on page 88
- "Removing Files and Folders from the Appliance" section on page 89
- "Configuring Offsite Backup" section on page 90
- "Adding a Folder for Backup" section on page 91
- "Listing Backed Up Folders" section on page 91
- "Listing the Contents of a Backed Up Folder" section on page 91
- "Purging Files at the Agent Level" section on page 91

- "Trimming Old Revisions of Files" section on page 92
- "Removing a Backed up Folder" section on page 92
- "Restoring a Folder from the Appliance to a Custom Folder" section on page 92
- "Configuring a Folder for Offsite Backup" section on page 92
- "Connecting to a Different Appliance" section on page 92

Connecting to the SonicWALL CDP Appliance

The Mac Agent can connect to the appliance by performing the following steps:

Step 1 Type the command:

cdpmenu

The following menu is displayed:

SonicWALL CDP AgentService [1.0.0.5]
Copyright 2009 Sonicwall, Inc.
Connection Menu
----
1. List available appliances
2. Manual Connection
3. Exit CDP application

Enter your choice from the above list:

Step 2 To select Manual connection, type **2** and then press **Enter**.
The following message is displayed:

Enter the IP address to connect or press [Esc] to cancel this and go back to Connection menu:

Step 3 To return to the Connection Menu, press the **Esc** key. To connect to the appliance, type the IP address of the SonicWALL CDP appliance, such as:

10.0.30.31

The Appliance Menu is displayed, as follows:

Appliance Menu [10.0.30.31]
----
1. List folders from appliance
2. Add folder for appliance backup
3. Purge Deleted Files of the agent
4. Remove Old Versions of the agent
5. Force Backup immediately
6. Go to Connection Menu
7. Exit CDP application

Enter your choice from the above list:

Adding a Folder for Backup

Add a folder for backup by performing the following steps:

Step 1 From the Appliance Menu, type **2** and then press **Enter**.
The following is displayed:

Add Folder

Enter the folder path to add or press [ESC-Enter] to cancel this operation:

Step 2 Type the folder path to be backed up, such as: **/Users/cdpadmin/Desktop**.
The following message is displayed:

*****Successfully added the folder '/Users/cdpadmin/Desktop" for backup to the appliance*****

The Appliance Menu is also displayed again:

Appliance Menu [10.0.30.31]

---

1. List folders from appliance
2. Add folder for appliance backup
3. Purge Deleted Files of the agent
4. Remove Old Versions of the agent
5. Force Backup immediately
6. Go to Connection Menu
7. Exit CDP application

Enter your choice from the above list:

Step 3 To force an immediate backup of the folder, type **5** and then press **Enter**.
The following message is displayed:

*****The MAC Agent service has been notified to do a backup immediately. It will start archiving in a minute.*****

Listing Backed Up Folders and Folder Contents

To list folders and their contents have been backed up on the appliance, perform the following steps:

Step 1 Type the command:

cdpmenu

The following menu is displayed:

SonicWALL CDP AgentService [1.0.0.5]
Copyright 2009 Sonicwall, Inc.

Appliance from last connection

10.0.30.31

Do you wish to connect to it [y/n]?:

Step 2 To connect to the appliance, type **y** and then press **Enter**.
The Appliance Menu is displayed:

Appliance Menu [10.0.30.31]

---

1. List folders from appliance
2. Add folder for appliance backup
3. Purge Deleted Files of the agent
4. Remove Old Versions of the agent
5. Force Backup immediately
6. Go to Connection Menu
7. Exit CDP application

Enter your choice from the above list:

Step 3 To list backed up folders on the SonicWALL CDP appliance, type **1**and then press **Enter**. The folders on the appliance are listed with more options, as in the following example:

List of Folders in the appliance [10.0.30.31]
----
1. /Users/cdpadmin/Desktop
2. /Users/cdpadmin/FileVault_Related
3. /Users/cdpadmin/PerlScripts
4. /Users/cdpadmin/RTTest
5./Users/cdpadmin/RTTest001

Select a folder from the above list or press [Esc-Enter] to cancel this and go back to Appliance Menu: 1

Step 4 To select the **/Users/cdpadmin/Desktop** folder, type **1** and then press **Enter**.

Appliance Menu [10.0.30.31]

Selected folder: /Users/cdpadmin/Desktop
Marked for Offsite backup: No
1. List folder contents
2. Restore folder to a path
3. Offsite backup settings
4. Remove old revisions of files
5. Purge deleted files
6. Remove folder from appliance backup
7. Go to list of Appliance folders
8. Go to Appliance Menu
9. Exit CDP application

Enter your choice from the above list:

Step 5 To list the contents of the folder /Users/cdpadmin/Desktop, type **1** and then press **Enter**. The folder contents are listed:

Folder Contents [10.0.30.31]

Selected folder: /Users/cdpadmin/Desktop

1. .localized
2. p4v.app/

Select your choice from the above list or press [Esc] to leave this list:

Purging Deleted Files

Deleted files can be purged from the SonicWALL CDP appliance at the agent level from the Appliance Menu, at the folder level from the Appliance Folder Menu and at the File level from the File Menu.

To purge deleted files from the SonicWALL CDP appliance at the agent level, perform the following steps:

Step 1 Type the command:

cdpmenu

The following menu is displayed:

SonicWALL CDP AgentService [1.0.0.5]
Copyright 2009 Sonicwall, Inc.

Appliance from last connection

10.0.30.31

Do you wish to connect to it [y/n]?:

Step 2 To connect to the appliance, type **y** and then press **Enter**.
The Appliance Menu is displayed:

Appliance Menu [10.0.30.31]
----
1. List folders from appliance
2. Add folder for appliance backup
3. Purge Deleted Files of the agent
4. Remove Old Versions of the agent
5. Force Backup immediately
6. Go to Connection Menu
7. Exit CDP application

Enter your choice from the above list:

Step 3 To purge deleted files, type **3** and then press **Enter**.

Step 4 Type **y** to confirm, as needed. The following message is displayed:

*****Successfully purged all the deleted files from the appliance.*****

Trimming Old File Revisions

Old revisions of files can be deleted from the SonicWALL CDP appliance at the agent level from the Appliance Menu, at the folder level from the Appliance Folder Menu, and at the individual file level from the File Menu.

To trim old file revisions from the SonicWALL CDP appliance at the agent level, perform the following steps:

Step 1 Type the command:

cdpmenu

The following menu is displayed:

SonicWALL CDP AgentService [1.0.0.5]
Copyright 2009 Sonicwall, Inc.

Appliance from last connection

10.0.30.31

Do you wish to connect to it [y/n]?:

Step 2 To connect to the appliance, type **y** and then press **Enter**.
The Appliance Menu is displayed:

Appliance Menu [10.0.30.31]
----
1. List folders from appliance

2. Add folder for appliance backup
3. Purge Deleted Files of the agent
4. Remove Old Versions of the agent
5. Force Backup immediately
6. Go to Connection Menu
7. Exit CDP application

Enter your choice from the above list:

Step 3 To purge deleted files, type **4**and then press **Enter**.

Step 4 Type **y** to confirm, as needed.

Removing Files and Folders from the Appliance

To remove a backed up folder and its contents from the SonicWALL CDP appliance, perform the following steps:

Step 1 Display the list of backed up folders as described above in the*"Listing Backed Up Folders and Folder Contents" section on page 86*

List of Folders in the appliance [10.0.30.31]
----
1. /Users/cdpadmin/Desktop
2. /Users/cdpadmin/FileVault_Related
3. /Users/cdpadmin/PerlScripts
4. /Users/cdpadmin/RTTest
5./Users/cdpadmin/RTTest001

Select a folder from the above list or press [Esc-Enter] to cancel this and go back to Appliance Menu: 1

Step 2 Type the number for the folder you want to remove and then press **Enter**.
The following menu is displayed when you select a folder:

Appliance Folder Menu [10.0.30.31]

Selected folder: /Users/cdpadmin/Desktop
Marked for Offsite backup: No
1. List folder contents
2. Restore folder to a path
3. Offsite backup settings
4. Remove old revisions of files
5. Purge deleted files
6. Remove folder from appliance backup
7. Go to list of Appliance folders
8. Go to Appliance Menu
9. Exit CDP application

Enter your choice from the above list:

Step 3 Type **6** as your choice and then press **Enter**.
The following confirmation is displayed:

Are you sure you want to remove this folder from the appliance [y/n]? :

Step 4 To remove the folder and its contents, type **y** and then press **Enter**.
The following messages are displayed:

Removing the file from appliance ".localized"
And all the files from p4v.app folder.

*****Successfully removed the folder "/Users/cdpadmin/Desktop" from the appliance*****

Configuring Offsite Backup

Offsite Backup can be set at the folder level. To configure a folder for offsite backup, perform the following steps:

Step 1 Display the list of backed up folders as described in the "Listing Backed Up Folders and Folder Contents" section on page 86.

List of Folders in the appliance [10.0.30.31]
----
1. /Users/cdpadmin/FileVault_Related
2. /Users/cdpadmin/PerlScripts
3. /Users/cdpadmin/RTTest001

Select a folder from the above list or press [Esc-Enter] to cancel this and go back to Appliance Menu:

Step 2 Type the number for the folder you want to restore and then press **Enter**.
The following menu is displayed when you select a folder:

Appliance Folder Menu [10.0.30.31]

Selected folder: /Users/cdpadmin/RTTest001
Marked for Offsite backup: No
1. List folder contents
2. Restore folder to a path
3. Offsite backup settings
4. Remove old revisions of files
5. Purge deleted files
6. Remove folder from appliance backup
7. Go to list of Appliance folders
8. Go to Appliance Menu
9. Exit CDP application

Enter your choice from the above list:

Step 3 Type **3**as your choice and then press **Enter**.
The following confirmation is displayed:

Offsite Backup Settings

Selected folder: /Users/cdpadmin/RTTest001
*******This folder is Not Marked for Offsite backup*******
If you want to add this folder for Offsite backup, press [y] else press any other key to leave this operation:

Step 4 Type **y** and then press **Enter**.
The following is displayed:

*******Successfully added the folder for Offsite Backup*******

Using the Command Line Interface (cdpcli)

The MAC Agent Tool includes a Command Line Interface, **cdpcli**. To use a command, type **cdpcli** on the MAC prompt, followed directly by the command and its arguments.

The table below contains the available commands for use with **cdpcli**:

ls	**addfolder**	**rmfolder**	**purge**	**trim**
restore	**addoffsite**	**rmoffsite**	**chgapp**	**help**

Adding a Folder for Backup

To add a folder on the appliance for backup, navigate to the command prompt and type the command as shown. Use the IP address of your SonicWALL CDP appliance followed by a colon, a forward slash, and then the folder name.

my-macbook:~cdpadmin#**cdpcli addfolder 10.0.30.31:/Users/cdpadmin/RTTest**

A confirmation message will display when the folder is successfully added for backup.

Listing Backed Up Folders

To list folders that may have been backed up in the appliance, navigate to the command prompt and type the command as shown. Use the IP address of your SonicWALL CDP appliance.

cdpcli ls 10.0.30.31

Listing the Contents of a Backed Up Folder

To list the contents of a folder that is backed up in the appliance, type the following command as shown in the command prompt. Use the IP address of your SonicWALL CDP appliance followed by a colon, a forward slash, and then the folder name.

my-macbook:~cdpadmin#**cdpcli ls 10.0.30.31:/Users/cdpadmin/RTTest**

You can view the listing, as seen in the example below:

Cdp_file1.txt
Cdp_file2.txt
Cdp_file3.txt

Purging Files at the Agent Level

To purge the deleted files from a folder, type the IP address of your SonicWALL CDP appliance followed by a colon, a forward slash, and then the folder name in the command prompt.

my-macbook:~cdpadmin#**cdpcli purge 10.0.30.31:/Users/cdpadmin/RTTest**

A confirmation message will display when all the deleted files have been successfully purged.

Trimming Old Revisions of Files

To trim old revisions of files, type the IP address of your SonicWALL CDP appliance followed by a colon, a forward slash, and then the folder name in the command prompt.

my-macbook:~cdpadmin#**cdpcli trim 10.0.30.31:/Users/cdpadmin/RTTest**

You can view the list of trimmed files and a confirmation message, shown in the image below:

Trimming the old revisions of "/Users/cdpadmin/CDP_TC1.pl"
Trimming the old revisions of "/Users/cdpadmin/CDP_TC10.pl
Trimming the old revisions of "/Users/cdpadmin/CDP_TC11.pl

Successfully trimmed the old revisions.

Removing a Backed up Folder

To remove a folder and its contents from the appliance, type the IP address of your SonicWALL CDP appliance followed by a colon, a forward slash, and then the folder name in the command prompt.

my-macbook:~cdpadmin#**cdpcli rmfolder 10.0.30.31:/Users/cdpadmin/RTTest**

A confirmation message will display when the folder has been removed.

Restoring a Folder from the Appliance to a Custom Folder

To restore a folder and its contents from the appliance to a custom folder on your Mac system, type the command, using the IP address of your SonicWALL CDP appliance followed by a colon, a forward slash, the folder name on the appliance, and then a space and the custom folder on the Mac system.

my-macbook:~cdpadmin#**cdpcli restore 10.0.30.31:/Users/cdpadmin/RTTest/Users/cdpadmin/Test**

A confirmation message will display when the folder has been restored.

Configuring a Folder for Offsite Backup

To restore a folder and its contents from the appliance to a custom folder on your Mac system, type the command, using the IP address of your SonicWALL CDP appliance followed by a colon, a forward slash, and then the folder name.

my-macbook:~cdpadmin#**cdpcli addoffiste 10.0.30.31:/Users/cdpadmin/RTTest/Users/cdpadmin/Test**

A confirmation message will display when the folder has successfully added for Offsite Backup

Connecting to a Different Appliance

To connect to a different SonicWALL CDP appliance, type the command, using the IP address of the target SonicWALL CDP appliance.

my-macbook:~cdpadmin#**cdpcli cgapp 10.208.108.10**

A confirmation message will display when the backup appliance has been successfully changed.

Obtaining Help on the 'cdpcli' Command Line Tool

To view the usage string for the cdpcli tool, perform the following steps:

1. At the prompt, type the command as shown:

   my-macbook:~cdpadmin#**cdpcli help**

2. View the usage string as shown below:

   Usage: cdpcli COMMAND [APPLIANCE-IP:APPLIANCE-PATH]... [OPTION]...

CDP CLI Applications

The following section includes a list of commands used throughout the SonicWALL CDP Mac OS X Agent.

Command Format

cdpcli Command [ApplianceIP:Path]
[Option]...

help Command

help
Displays the help information.

version Command (-v)

version
Displays the version information

ls Command (-l)

ls
Lists the available CDP appliances.

ls <ApplianceIP>
Lists the folders from the appliance with *ApplianceIP.*

ls <ApplianceIP:FolderPath>
Lists the contents of the *FolderPath* on the *ApplianceIP* appliance.

ls <ApplianceIP:FilePath>
Lists the revision of the *FolderPath* on the *ApplianceIP* appliance.

addfolder Command (-af)

addfolder <ApplianceIP:FolderPath>
Adds the *FolderPath* to backup to the *ApplianceIP* appliance.

rmfolder Command (-rf)

rmfolder <ApplianceIP:FolderPath>
Removes the *FolderPath* to backup from the *ApplianceIP* appliance.

lsoffsite Command (-lo)

lsoffsite <ApplianceIP>
Lists the folders marked for offsite backup on the *ApplianceIP* appliance.

addoffsite Command (-ao)

addoffsite <ApplianceIP:FolderPath>
Adds the *FolderPath* for offsite backup on the *ApplianceIP* appliance.

rmoffsite Command (-ro)

rmoffsite <ApplianceIP:FolderPath>
Removes the *FolderPath* from offsite backup on the *ApplianceIP* appliance.

chgapp Command

chgapp <ApplianceIP>
Changes the connection to *ApplianceIP* appliance.

trim Command (-t)

trim <ApplianceIP>
Trims old revisions of the files and folders on the *ApplianceIP* appliance.

trim <ApplianceIP:FolderPath>
Trims old revisions of the files recursively in the *FolderPath* on the *ApplianceIP* appliance.

trim <ApplianceIP:FilePath>
Trims old revisions of *FilePath* on the *ApplianceIP* appliance.

purge Command (-p)

purge <ApplianceIP>
Purges deleted files and folders on the *ApplianceIP* appliance.

purge <ApplianceIP:FolderPath>
Purges deleted files and folders in *FolderPath* on the *ApplianceIP* appliance.

purge <ApplianceIP:FilePath>
Purges deleted *FilePath* on the *ApplianceIP* appliance.

restore Command (-R)

restore <ApplianceIP:FolderPath>
Restores *FolderPath* from the *ApplianceIP* appliance.

restore <ApplianceIP:FilePath>
Restores *FilePath* from the *ApplianceIP* appliance.

restore <ApplianceIP:FolderPath>TargetPath
Restores *FolderPath* from the *ApplianceIP* appliance to *TargetPath*.

restore <ApplianceIP:FilePath>TargetPath
Restores *FilePath* from the *ApplianceIP* appliance to *TargetPath*.

restore -r <RevisionNumber><ApplianceIP:FilePath>TargetPath
Restores *RevisionNumber* of the *FilePath* from the *ApplianceIP* appliance to *TargetPath*.

restore -f <ApplianceIP:FolderPath>TargetPath
Forced restore of the *FolderPath* from the *ApplianceIP* appliance to *TargetPath*, even if the *TargetPath* is existing.

restore -f <ApplianceIP:FilePath>TargetPath
Forced restore of the *FilePath* from the *ApplianceIP* appliance to *TargetPath*, even if the *TargetPath* is existing.

move Command (-mv)

move <ApplianceIP:FolderPath>TargetPath
Moves the folder from *FolderPath* to *TargetPath* on the *ApplianceIP* appliance and in the local file system.

move <ApplianceIP:FilePath>TargetPath
Moves the file from *FilePath* to *TargetPath* on the *ApplianceIP* appliance and in the local file system.

rename Command (-rn)

rename <ApplianceIP:FolderName>NewName
Renames the folder from *FolderName* to *NewName* on the *ApplianceIP* appliance and in the local file system.

rename <ApplianceIP:FileName>NewName
Renames the folder from *FileName* to *NewName* on the *ApplianceIP* appliance and in the local file system.

Other Features

Backup Strategy

CDP Mac OS X Agent 1.0 will start to backup one file if it is stable.

If one file is changed frequently, the Agent will not backup the file unless it remains unchanged for a certain amount of time. Also, note that if one file is changed during backup, the backup will be cancelled.

The desired stable time is based on size. The following table contains the calculation method for the stable time:

File Size (less than)	Stable Time
1 MB	5 seconds
5 MB	15 seconds
15 MB	40 seconds
50 MB	2 minutes
100 MB	5 minutes
200 MB	10 minutes
500 MB	30 minutes
1 GB	60 minutes
2 GB	150 minutes
4 GB	360 minutes
Larger than 4 GB	720 minutes

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